BARRIERS TO BREAST CANCER SURVIVORSHIP CARE IN PRIMARY HEALTH CARE: AN INTEGRATIVE LITERATURE REVIEW

by

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Abstract

Due to earlier recognition and advances in cancer treatment, increasing numbers of women are surviving breast cancer. In Canada, these women are transitioned back to their Primary Care Providers (PCPs), including Nurse Practitioners (NPs) and physicians, soon after their cancer treatment is complete. However, the research suggests that there are numerous barriers that hinder PCPs from delivering evidence-based care to breast cancer survivors. The purpose of this project was to answer the following research question: what are the barriers that PCPs encounter in providing breast cancer survivorship care in the primary health care setting to women who have completed active cancer treatment in Canada? To answer this question a comprehensive review of the literature was conducted. The findings of this integrative review demonstrated provider-related barriers and system-related barriers linked to knowledge deficits, attitudes, workload demands, and perceived suboptimal oncologist support. Key strategies and recommendations to overcome these barriers were examined and discussed in order to improve the care of breast cancer survivors in the primary health care setting.

Keywords: breast cancer survivors, breast cancer survivorship, primary care providers, nurse practitioners, physicians, primary health care

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Dedication

This project is dedicated to each and every cancer survivor I have the honor of knowing. You have shown me what it means to have strength, perseverance, and resilience.

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CHAPTER ONE

Introduction

The most common cancer impacting women worldwide is breast cancer (Canadian Cancer Society, 2017). In Canada, this disease accounts for 25% of all cancer diagnoses among women (Canadian Cancer Statistics Advisory Committee, 2018). Due to earlier recognition and advances in cancer treatment the prevalence of breast cancer survivors is increasing. According to the Canadian Cancer Society (2019b), 88% of women who are diagnosed with breast cancer have a five-year relative survival rate, with only 23 deaths per every 100,000 diagnoses in Canada. Moreover, mortality rates of breast cancer have decreased by more than 44% since its peak in 1986 (Canadian Cancer Statistics Advisory Committee, 2018). The increasing number of breast cancer survivors presents a positive yet challenging disposition to Primary Care Providers (PCPs) in Canada, including Nurse Practitioners (NPs) and physicians, due to their responsibility to provide breast cancer survivorship care (Chopra & Chopra, 2014; Cooper, Loeb, & Smith, 2010; Smith, Wai, Alexander, & Singh-Carlson, 2011).

Survivorship is best supported by PCPs in primary health care settings because it is a phase in the cancer care trajectory that focusses on quality of life after completing specialized cancer treatment, until recurrence or end of life (Institute of Medicine [IOM], 2006). Furthermore, due to the increasing burden of breast cancer survivors on the tertiary cancer centres and the shortage of cancer specialists in Canada (Aju, 2018), survivors are discharged by their oncologists back to their PCPs soon after completion of active cancer treatment (Cooper et al., 2010; Del Giudice, Grunfeld, Harvey, Piliotis, & Verma, 2009; Smith et al., 2011). PCPs are essential to improving health outcomes for breast cancer survivors through their critical role in the survivorship phase of the cancer care trajectory.

Breast cancer survivorship care is complex and requires a high degree of knowledge and expertise concerning the impacts that breast cancer and its treatment can have on survivors, and the guidelines and recommendations addressing such impacts. The landmark report *From Cancer Patient to Cancer Survivor: Lost in Transition* (IOM, 2006), was one of the first documents to identify the unique needs of cancer survivors and provide standards of care for this population in relation to the following components: prevention, surveillance, intervention, and coordination. Since the release of this report, evidence-based guidelines have been created based on its foundational standards of care in order to assist PCPs in delivering breast cancer survivorship care. Although evidence-based guidelines are in place, research suggests that there are numerous factors hindering PCPs from delivering survivorship care based on these guidelines (Chopra & Chopra, 2014; Dawes et al., 2015; Kantsiper et al., 2009; Luctkar-Flude, Aiken, McColl, & Tranmer, 2015b; Smith, Murchison, Singh-Carlson, Alexander, & Wai, 2015). Acknowledgment of issues pertaining to the PCPs' ability to deliver evidence-based breast cancer survivorship care, and identification of solutions to mitigate these barriers are imperative as inadequate care jeopardizes the health, wellness, and outcomes of breast cancer survivors.

There is a lack of overall knowledge of the multifaceted barriers affecting the delivery of breast cancer survivorship care in the primary health care setting, with no existing study that captures a holistic representation of this problem. Without clearly identifying and analyzing the barriers to care, it is impossible to fully appreciate the extent of the issue in Canada. I speculate that a synthesis of the existing research may help to identify key strategies to overcome barriers to breast cancer survivorship care in the primary health care setting.

In light of the magnitude of the issue outlined, this integrative review aims to identify the barriers that PCPs experience that influence the provision of evidence-based breast cancer

survivorship care in the primary health care setting to women following active cancer treatment, and to explore strategies to overcome these barriers. Choice of method for conducting the integrative review was guided by the following research question: what are the barriers that PCPs encounter in providing breast cancer survivorship care in the primary health care setting to women who have completed active cancer treatment in Canada? To address this question, literature relevant to the background and context will first be explored. Following this, the methods and findings of this integrative literature review will be presented. By exploring existing barriers to the provision of breast cancer survivorship care, it will be possible to identify strategies to overcome these barriers. By facilitating the provision of evidence-based breast cancer survivorship care, this integrative literature review may lead to improved patient outcomes.

CHAPTER TWO

Background and Context

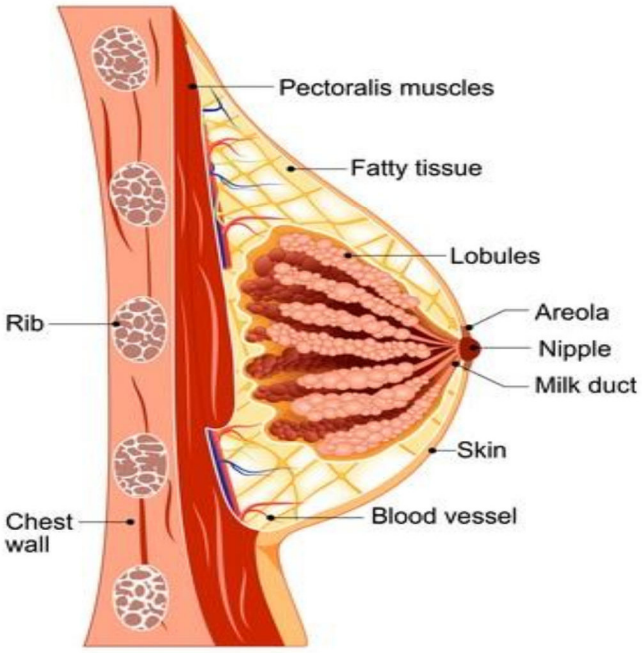
Prior to conducting the integrative review, it is vital to first recognize pertinent background information that informs the issue, context, and boundaries of the review itself. Thus, the following sections of this chapter will summarize the essential data providing the foundation for commencing the integrative review. This will include an overview of the epidemiology, pathophysiology, diagnosis, and treatment of breast cancer, as well as pertinent information regarding breast cancer survivorship.

Breast Cancer

Epidemiology. In Canada, approximately one in eight women will develop breast cancer in their lifetime (Government of Canada, 2017). This means that out of an estimated 18,500,873 females in Canada (Statistics Canada, 2018), approximately 2,312,609 women will have, do have, or already had this disease. According to the Canadian Cancer Statistics Advisory Committee (2018), the five-year relative survival rates for breast cancer vary depending on which stage of cancer one has, with only 22% survival for the latest stage of cancer (stage IV) and almost 100% survival for the earliest stage of cancer (stage I). With that being said, between 2011 and 2015 more than 80% of Canadian women who were diagnosed with breast cancer had stage I or II and less than 5% had stage IV (Canadian Cancer Statistics Advisory Committee, 2018). The number of women diagnosed in the early stages of breast cancer could explain why the prevalence of breast cancer survivors in Canada has grown significantly in the last several decades.

Pathophysiology. Anatomically, the breast overlies the pectoralis major muscle and is composed of glandular tissue including ducts and lobules, as well as connective tissue and fatty tissue (Kerr, Haller, Velde, & Baumann, 2016) as reflected in Figure 1.

Figure 1 *Anatomy of the Breast*



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The most common forms of breast cancer develop in the epithelial cells lining the ducts or lobules of the breast (Kosir, 2018). When malignant cells are confined to the ducts or lobules the cancer is classified as noninvasive and referred to as Ductal Carcinoma In Situ (DCIS) or Lobular Carcinoma In Situ (LCIS) (Kosir, 2018). Whereas, when malignant cells spread to the stromal cells or tissue outside the ducts or lobules or through the regional lymph nodes the cancer is classified as invasive. When the malignant cells have spread to other areas of the body, the breast cancer is considered both invasive and metastatic.

Hormones can often play a role in the pathophysiology of this disease and are important biomarkers for the classification of breast cancer. Estrogen Receptors (ERs) and Progesterone Receptors (PRs) can be found in both normal cells and malignant cells of the breast, however they tend to be overexpressed in malignant cells (Kerr et al., 2016). The ERs and PRs can promote cellular growth and division of breast cancer when estrogen and progesterone hormones bind to the sites. Approximately two-thirds of postmenopausal women diagnosed with breast cancer have an ER-positive (ER+) tumor, which is associated with better prognosis than breast cancers that are ER-negative (ER-) (Dai, Xiang, Li, & Bai, 2016). This is because these types of tumors are much more likely to respond to hormonal therapy, which is discussed further in the treatment section.

Proto-oncogenes, which normally regulate cellular growth and differentiation, can be implicated in breast cancer as well. When mutated or altered, proto-oncogenes can become oncogenes such as the Human Epidermal Growth Factor Receptor 2 (HER2) and can cause unregulated growth of breast cancer (Kerr et al., 2016). HER2 over-expression is associated with more aggressive forms of breast cancer as well as higher recurrence rates and occurs in approximately 20% of invasive ductal breast cancers (Dai et al., 2016).

Screening. Appropriate screening methods support early detection of breast cancer in women. The Canadian Task Force on Preventative Health (2018b) recommends that average risk women ages 50 to 74 receive routine screening with mammography every two to three years. It is no longer recommended that average risk women ages 40 to 49 receive routine mammography, as the harms have been found to outweigh the benefits in this age group. For those women ages 40 to 74 who have a high risk of acquiring breast cancer (see Table 1), annual

screening mammograms are recommended (BC Cancer, 2018;[1] Canadian Task Force on Preventative Health, 2018b).

Table 1 *High Risk Women for Breast Cancer*

High Risk Women for Breast Cancer
• Personal history of breast cancer • Family history of breast cancer • Known *BRCA1* or *BRCA2* gene mutations • Known first-degree relative with *BRCA1* or *BRCA2* gene mutations • History of radiation therapy to chest before 30 years of age or within the past eight years

(Adapted from Canadian Task Force on Preventative Health, 2018b)

Breast Self Exams (BSE) by the individual and routine Clinical Breast Exams (CBE) by the PCP are no longer recommended to screen for breast cancer in asymptomatic women with no prior history of this disease, as the evidence supports that these strategies do not reduce breast cancer mortality or all-cause mortality (Canadian Task Force on Preventative Health, 2018a). Rather, BSE's have been associated with increased harm from a breast biopsy of benign origin (Canadian Task Force on Preventative Health, 2018a). It is important however, for the PCP to conduct CBEs on women who present with concerns regarding abnormal breast changes (Canadian Task Force on Preventative Health, 2018b).

Diagnosis. The process of diagnosing breast cancer often begins after a lump or mass has been detected in the breast either during a BSE, a CBE, or a mammogram (Canadian Cancer Society, 2018a). After lump detection, further physical exams and imaging studies may be conducted in order to differentiate between benign lumps not requiring further investigation, or lumps with a high suspicion of malignancy. For suspected malignancy, a biopsy of the lump's tissue is required in order to make a definitive diagnosis of breast cancer. The form of biopsy

[1] The BC Cancer Agency's name was changed to BC Cancer in 2017 (BC Cancer Foundation, 2017)

used depends on whether the lump is palpable or non-palpable and can include: Fine Needle Aspiration (FNA) biopsy, core needle biopsy, stereotactic core biopsy, wire localization biopsy, surgical biopsy, or punch biopsy (Canadian Cancer Society, 2018). A Sentinel Lymph Node Biopsy (SLNB) can also be done in order to determine if the breast cancer has spread to the lymph nodes. Rather than removing all of the axillary lymph nodes draining the breast tissue, a SLNB only dissects the first lymph node in the axillary chain draining fluid away from the tumor site (Zahoor et al., 2017). An SLNB helps with staging the disease, as well as can prevent increased morbidity caused by an Axillary Lymph Node Dissection (ALND).

Anatomical staging of breast cancer is done according to the tumor-nodes-metastasis (TNM) classification system, which evaluates the size of the tumor, the extent of regional lymph node involvement, and spread of metastases (American Joint Committee on Cancer [AJCC], 2018). Broadly speaking, there are five stages of breast cancer, including stage 0 (Carcinoma in situ) followed by stages I (early stage breast cancer) to IV (metastatic breast cancer) (Canadian Cancer Society, 2019a). In addition to the TNM categories, there are other staging factors that must be taken into account when determining both prognosis and viable treatment options for individuals with breast cancer, including ER/PR and HER2 status, and tumor grade (AJCC, 2018). The tumor grade refers to how abnormal the tumor's tissue and cells looks under a microscope, and is usually graded on a scale of one to three, with one looking more like normal tissue than three. Oncogenomic tests, including the Oncotype Dx Assay[2] test for example, may also be considered during the cancer staging process to further determine prognosis and whether or not one may benefit from certain treatments (AJCC, 2018).

[2] The Oncotype Dx Assay test examines several cancer-related genes in tumor tissue that help determine how likely the cancer is to metastasize or recur, as well as how likely it will respond to certain systemic therapy options.

Women with metastatic breast cancer, also known as stage IV breast cancer, are rarely discharged back to their PCP due to the incurable state of this stage of cancer, as well as the complexities associated with wide-spread disease (BC Cancer, 2017a). In staying aligned with a primary health care context, the remainder of this chapter will focus on breast cancer that is eligible for curative-intent treatment options that have potential to lead to cancer remission and/or cure.

Treatment. There are numerous different treatment options for women with breast cancer in Canada including a combination of surgery, radiation therapy, and systemic therapy. Treatment regimens are chosen according to: evidence-based provincial policies; stage and biomarker profile of cancer; risk-benefit ratio; and patient characteristics such as age, co-morbidities, life-expectancy, menopausal status, and personal preferences (BC Cancer, 2016; Kerr et al., 2016). Each of these treatment options will be summarized in the following paragraphs. However, it is important to keep in mind that cancer treatment is constantly evolving based on the latest evidence.

Surgery. The key goal of surgery for breast cancer is to attain local control of the disease (Kerr et al., 2016). There are two main types of surgeries for breast cancer including Breast Conserving Surgery (BCS) and a mastectomy. BCS is appropriate for women with early stage disease (stage I or II) and depending on the size and location of the tumor the BCS can either consist of a lumpectomy, wide local excision (WLE), partial mastectomy, or segmental mastectomy (BC Cancer, 2016; Rahman, 2011). The surgical technique chosen for BCS is based on not only what will achieve local tumor control, but also on what will allow for the most esthetically pleasing result (Rahman, 2011). Adjuvant radiation therapy is often recommended for those who have BCS in order to reduce the risk of ipsilateral breast cancer recurrence (BC

Cancer, 2016; Rahman, 2011). Conversely, a Total Mastectomy (TM) is a surgical technique that removes the entire breast including the lining over the pectoralis major muscle but does not include an ALND. A TM is also an option for those with early stage breast cancer who have a contraindication to BCS including: multicentric disease, prior radiation therapy to the chest wall, poor cosmetic or clinical outcome with BCS, or pregnancy that prevents adjuvant radiation therapy (BC Cancer, 2016; Rahman, 2011). A Modified Radical Mastectomy (MRM) is the same as a TM, only axillary lymph nodes are also removed (Kerr et al., 2016).

Radiation Therapy. Radiation therapy can have a vital role in treating breast cancer in combination with other treatment modalities or on its own and is indicated for women with invasive breast cancer that is node-positive or high-risk cases that are node-negative (BC Cancer, 2017c). Radiation therapy works by damaging the tumor cells either by directly inducing ionization on the tumor or by indirectly producing free radicals from ionization (Basker, Dai, Wenlong, Yeo, & Yeoh, 2014). The rationale of this treatment modality is based on evidence that malignant cells are more at risk of DNA damage than normal cells because they rapidly proliferate (Baskar et al., 2014). Radiation can be delivered outside of the body through external beam radiation therapy, or radioactive material can be delivered internally through brachytherapy or systemic radiation therapy (Basker et al., 2014). The goal of radiation therapy is to have the most impact on tumor control, while reducing the damage to normal cells (Basker et al., 2014).

Systemic therapy. As opposed to surgery or radiation therapy which target cancer cells in a localized area, systemic management of breast cancer can eliminate malignant cells that are located anywhere in the body. Treatment modalities that are considered systemic therapy include hormonal therapy, chemotherapy, and targeted therapy (BC Cancer, 2013). Systemic treatment regimens are influenced by the aforementioned list of factors discussed for any cancer treatment,

as well as the following three broad characteristics: hormone receptor positive and HER2 negative cancers; HER2 positive cancers; and triple negative cancers (ER-PR-HER2-) (BC Cancer, 2013).

For women with ER+ or PR+ breast cancer, five years of hormone therapy is recommended based on a significant survival benefit of such treatment (BC Cancer, 2013). For pre-menopausal women the hormone treatment of choice is tamoxifen, whereas in post-menopausal women an aromatase inhibitor and/or tamoxifen is considered (BC Cancer, 2013). For early stage breast cancer, chemotherapy is considered if any of the following characteristics are present: tumor size of over two cm; lymphatic and/or vascular invasion; tumor grade of three; weak hormonal receptor expression; or node positive findings (BC Cancer, 2013). In addition to these characteristics, oncogenomic tests are also starting to be utilized to identify the usefulness of chemotherapy. One noteworthy clinical trial underway for women with breast cancer is the Trial Assigning Individualized Options for Treatment (TAILORx) (National Cancer Institute, 2018). The trial's initial findings established that chemotherapy does not provide a significant survival benefit to women with early stage hormone receptor-positive, HER2-negative, node negative breast cancer that have a low or intermediate risk of recurrence based on their Oncotype Dx Assay (National Cancer Institute, 2018). Trial's such as this highlight the importance of personalizing cancer treatment to each individualized patient.

There are several adjuvant chemotherapy drugs available for women with breast cancer who may benefit from this treatment modality and in general, most regimens include four to six months of treatment (BC Cancer, 2013). A treatment regimen for those with HER2+ breast cancer is usually a combination of chemotherapy, a HER2 targeted therapy called trastuzumab, and hormone therapy if indicated (BC Cancer, 2013). On the contrary, triple negative breast

cancers do not benefit from hormone or targeted therapy, therefore chemotherapy is strongly recommended (BC Cancer, 2013). Chemotherapy is occasionally given as Neoadjuvant Therapy (NAT) for breast cancer, which means that it is given prior to surgery. Most commonly, NAT is considered for patients with inoperable disease or large tumors because it can decrease the size of the tumor and render it operable (BC Cancer, 2017b). In the past, further neoadjuvant chemotherapy was not recommended if residual disease was still present after the completion of this treatment (Zujewski & Rubinstein, 2017). However, findings of a clinical trial called CREATE-X found that adjuvant capecitabine[3] improves survival outcomes in women with early stage, HER2-negative breast cancer who did not receive a complete response with neoadjuvant chemotherapy (Zujewski & Rubinstein, 2017). Due to ongoing changes in recommendations for cancer treatment, it is important for health care providers to remain up-to-date.

After active cancer treatment ends, cancer survivorship as a phase in the cancer care trajectory follows. It is important to mention that active treatment, such as surgery, radiation, chemotherapy, and/or targeted therapy, refers to treatments that have an immediate effect on breast cancer control, and involve tertiary health care, whereas treatment that can be prescribed and followed by a PCP such as hormonal therapy, is not considered active treatment within a cancer context. Therefore, the breast cancer survivorship experience as it relates to post-active treatment can still include hormonal therapy such Tamoxifen and/or an aromatase inhibitor.

Breast Cancer Survivorship

Conceptual definition. In order to understand the parameters inherent to this integrative review, it is vital to have a clear and consistent definition of cancer survivorship. Conceptual clarity helps create a common language for discussing breast cancer survivorship care, and in

[3] Capecitabine is an oral chemotherapy drug used to treat certain cancers including breast cancer.

doing so will better guide the outcomes of this integrative review. Therefore, the next part of this paper will summarize the concept of cancer survivorship and how it will be explored within the parameters of this study.

Firstly, cancer survivorship is a concept that was created to embody the experience of cancer survivors across the cancer care trajectory, which spans from diagnosis until the end of one's life (Miller, Pandey, Jain, & Mehta, 2015; National Coalition for Cancer Survivorship [NCCS], 2014; Ness et al., 2013; Oliveira, Araujo, Conceição, & Zago, 2015; Rowland, 2008; Wronski, 2015). Consequently, once one is diagnosed with cancer, cancer survivorship as a process of living does not end. For the purpose of this integrative review breast cancer survivorship will be explored in the time span after active cancer treatment is complete until end of life or cancer recurrence, which is when a primary health care context is the most relevant.

The definition and application of cancer survivorship is most widely used to discuss an experience that is exclusive to the individual with cancer, not their family, friends, or caregivers (Bell & Ristovski-Slijepcevic, 2013; Burkett & Cleeland, 2007; Dirven, van de Poll-Franse, Aaronson, & Reijneveld, 2015; Khan, Rose, & Evans, 2012; Oliveira et al., 2015; Wronski, 2015; Zebrack, 2015). The exclusivity, in part, is due to the fact that anyone other than the individual with cancer will not experience the negative and positive elements intrinsically tied to having cancer and receiving cancer treatment. Therefore, when breast cancer survivorship is discussed in this integrative review it pertains only to women diagnosed with breast cancer.

Lastly, cancer survivorship is not only exclusive to the individual with cancer, but also unique to each cancer survivor. It is a multifaceted concept that requires deconstruction and reflection of the contexts inherent to the cancer survivor which include: sex, age, ethnicity, type of cancer, type of cancer treatment, prognosis of disease, comorbidity, culture, country, health

care system, support systems, personal characteristics and socioeconomic status (Bell & Ristovski-Slijepcevic, 2013; Dirven et al., 2015; Khan et al., 2012; Miller et al., 2015; Zebrack, 2105). With that being said, the needs of cancer survivors are diverse and greatly dependent on their individual circumstances.

Needs of breast cancer survivors. After the completion of active cancer treatment, the needs of breast cancer survivors are multifaceted. The cancer and its treatment can cause numerous acute, chronic, late, and/or permanent effects spanning physical, emotional, mental, and social domains of health (IOM, 2006). Physical toxicities from cancer treatment may extend from acute issues to chronic issues and often include pain, lymphedema, fatigue, sleep disturbances, and peripheral neuropathy (Cheng, Devi, Wong, & Koh, 2014). In addition to physical ailments, breast cancer survivors can also experience emotional distress, anxiety, and depression related to fear of recurrence, body image issues, and adjusting to a new normal (Fiszer, Dolbeault, Sultan, & Bredart, 2014). Mentally, women report they struggle with feelings of abandonment after cancer treatment ends due to the lack of continuity of care, and inadequate supportive services in place (Cheng, Cheng, Wong, & Koh, 2017; Olson et al., 2014). Each of these components also affect social functioning in regards to relationships with family and friends and returning to work or the activities one did before being diagnosed with breast cancer.

It is important to remember that the cancer experience does not end once active treatment is complete. A groundbreaking study of 30,000 Canadians who had been diagnosed with cancer, and were either living with or beyond the disease, reported that issues caused by the side effects of cancer and its treatment are not being adequately addressed (Canadian Partnership Against Cancer, 2018). It is also vital to acknowledge the unique experience of a breast cancer survivor. In a study done by Burg et al. (2015), breast cancer survivors reported the most unmet needs out

of six different types of cancer. Women with breast cancer require increased access to survivorship care, more emotional support, and better education regarding health promotion and disease prevention in order to improve the quality of their lives after active cancer treatment ends (Cheng et al., 2014; Cheng et al., 2017; Fiszer et al., 2014; Olson et al., 2014;). In order to address these gaps, there may have to be a change in current models of breast cancer survivorship care.

Models of care. Current breast cancer survivorship care models differ based on the following: type of provider delivering care; type of care setting; and overall purpose of the program (Halpern et al., 2015). Providers used in survivorship care models include physicians, NPs, oncologists, and/or oncology nurses, in either out-patient primary health care settings or specialized tertiary cancer centres (Halpern et al., 2015). It is important to note that the term physician is referring to a general practitioner. Although oncologists are considered physicians with a specialty in cancer care, they will only be referred to as oncologists in this integrative review in order to avoid confusion between these providers. Key models of care can be described as a PCP-led care model, oncologist-led care model, shared-care model, or specialized clinic model. To clarify, the shared-care model as it relates to cancer survivorship care is provided by the oncologist and the PCP who both have equal responsibility in such care (American Society of Clinical Oncology [ASCO], 2019). The specialized clinic model refers to care that is provided to cancer survivors in a specialized clinic and is led by a NP and/or physician who have advanced cancer survivorship training (Halpern et al., 2015). Purposes of survivorship care models are based on the program in which they are delivered, such as those that focus on cancer survivors' transition from tertiary health care to primary health care after the completion of active treatment (Halpern et al., 2015). While there are varied approaches for cancer survivorship care programs,

they each aim to improve the quality of life of cancer survivors through evidence-based, best practice care delivery.

Primary health care. Although there is no evidence to suggest one survivorship care model is superior to another (Halpern et al., 2015), the literature does support breast cancer survivorship care being delivered in a primary health care setting. Sussman et al. (2017) found that after the completion of active cancer treatment it is a practical and safe option for breast cancer survivors to be discharged from specialist-led care within a tertiary health care setting to PCP-led care within a primary health care setting (Sussman et al., 2017). In fact, it has been found that patient satisfaction with breast cancer survivorship care is far greater in a primary health care setting versus a tertiary health care setting (Sussman et al., 2017), which further supports a PCP-led care model.

Primary care providers. It is essential to understand the similarities and differences between the two main PCPs in Canada, NPs and physicians, in order to understand how they can support the delivery of breast cancer survivorship care in the primary health care setting. Both NPs and physicians are autonomous health care professionals who can diagnose and treat medical conditions and diseases, order and interpret diagnostic tests, prescribe pharmacotherapy, and perform medical procedures within their legislated scope of practice outlined by their provincial regulatory bodies (Canadian Nurses Association, 2018; College of Physicians and Surgeons of British Columbia, 2018). It is important to note that NPs' and physicians' scopes of practice differ between provinces, with some legislating wider scopes of practice than others.

A key difference between NPs and physicians in Canada is their educational backgrounds. NPs must first obtain their Bachelor of Nursing degree and gain two to five years of full-time nursing experience prior to applying to a nurse practitioner program, which is

delivered at a master's level. Whereas, a physician goes to medical school to obtain an undergraduate degree in medicine and then following this, requires at least two years of hands on experience in a residency program depending on the field in which they choose to specialize. Even with differing educational backgrounds, the evidence suggests that NPs and physicians provide comparable care that leads to equivalent health outcomes of patients in the primary health care setting (Horrocks, Anderson, & Salisbury, 2002; Stanik-Hutt et al., 2013).

Evidence-based guidelines. The most current evidence-based Canadian national guidelines for breast cancer survivorship care within a primary health care setting were created by Luctkar-Flude, Aiken, McColl, and Tranmer (2015a) and Sisler, Chaput, Sussman, and Ozokwelu (2016). In addition to national guidelines, it is important to note that most provinces in Canada have created their own guidelines (Alberta Health Services, 2015; BC Guidelines, 2013). Each of these guidelines fall in line with the landmark report by the IOM (2006), that states survivorship care should include four components: prevention of recurrent and/or new cancers, as well as late effects of cancer; surveillance for recurrent and/or new cancers and assessment of physical and psychosocial effects of cancer; intervention for long-term effects of cancer and/or cancer treatments; and coordination and/or referral between the interdisciplinary team to confirm all health care needs are being met. To summarize, these guidelines include recommendations to help patients improve their health status and prevent cancer recurrence such as exercise, nutrition, weight management, and other aspects of health promotion. They also comprise surveillance recommendations including imperative health assessments to be performed and investigations to be ordered at specific intervals in time. Moreover, the guidelines highlight screening and treatment recommendations for physical and psychological consequences of breast cancer and its treatment. Lastly, the guidelines discuss recommendations to utilize other

interdisciplinary team members as warranted, as well as encourage the use of survivorship care plans and/or discharge letters from oncologists to ensure all health care needs of breast cancer survivors are being met in the primary health care context. These guidelines can be used to direct all activities to be implemented for breast cancer survivorship care.

The next chapter will describe the literature search strategy used to answer the question: what are the barriers that PCPs encounter in providing breast cancer survivorship care in the primary health care setting to women who have completed active cancer treatment in Canada? The purpose of this literature search was to identify a comprehensive representation of the barriers affecting the delivery of evidence-based breast cancer survivorship care in the primary health care setting. The findings following a critical analysis of the literature were synthesized and are presented in the findings and discussion and recommendations chapters.

CHAPTER THREE

Research Methods

Comprehensive recognition of a problem, such as barriers to the delivery of breast cancer survivorship care, is a necessary first step that must be taken before effective upstream solutions can be identified. The following sections of this chapter will provide an overview of the research methods utilized to answer the main research question of this integrative review.

An integrative review method was chosen as it combines published quantitative, qualitative, and mixed-methods research in order to provide a more comprehensive understanding of a research problem (Whittemore & Knafl, 2005). This form of review method has the ability to present strong research evidence to inform clinical practice in primary health care and support policy development (Whittemore & Knafl, 2005). However, in order for integrative reviews to be considered high quality evidence, a structured process indicating systematic and rigorous methods of the literature search, appraisal and analysis are necessary. With the intention of better guiding a systematic research process the author utilized methodologies from *Health Evidence* (2009), *Critical Appraisal Skills Programme* tools ([CASP], 2018), Torraco (2005), and Whittemore and Knafl (2005) for this integrative review.

Prior to conducting the literature search, eligibility criteria were developed in order to determine relevant sources of literature that focussed on the research question. Due to the dramatic changes that have occurred in cancer treatment and care over the last decade, sources of research were limited to articles published between July 2008 and July 2018. Only peer-reviewed articles published in English were included in order to ensure quality and enable review of such sources. Since the focus of this proposed integrative review is on PCPs, including NPs and physicians, literature sources had to be relevant to those disciplines. However, articles were not

excluded if they also pertained to other care providers as long as the data pertaining to each discipline were separately obtained and documented in the study. In addition, since the context of the review is primary health care, literature had to be focussed on care in this setting. As the population of interest is for those patients with breast cancer, the literature was limited to studies that focussed on 50% or more of this disease group. For example, inclusion was granted for studies pertaining to breast cancer survivors and one more cancer group (i.e. colorectal cancer survivors). In order for the results of this integrative review to be generalizable to diverse populations, inclusion was permitted for literature that pertained to women of all ages with breast cancer. The main reasons for not including male breast cancer survivors in this review is because breast cancer survivorship care is highly gender-informed, and less than 1% of all breast cancer occurs in men (Canadian Cancer Society, 2018). In addition, this review only included articles related to the delivery of breast cancer survivorship care after the completion of active cancer treatment, due to this research having a primary health care focus. Lastly, studies included in the review had to be conducted within North America, including Canada and the United States. The reason for not including all areas of the world is due to the diversity that exists between patient, provider, and system factors in other countries, and therefore the degree of variables an international scope would introduce within the integrative review. These inclusion and exclusion criteria are summarized in Table 2.

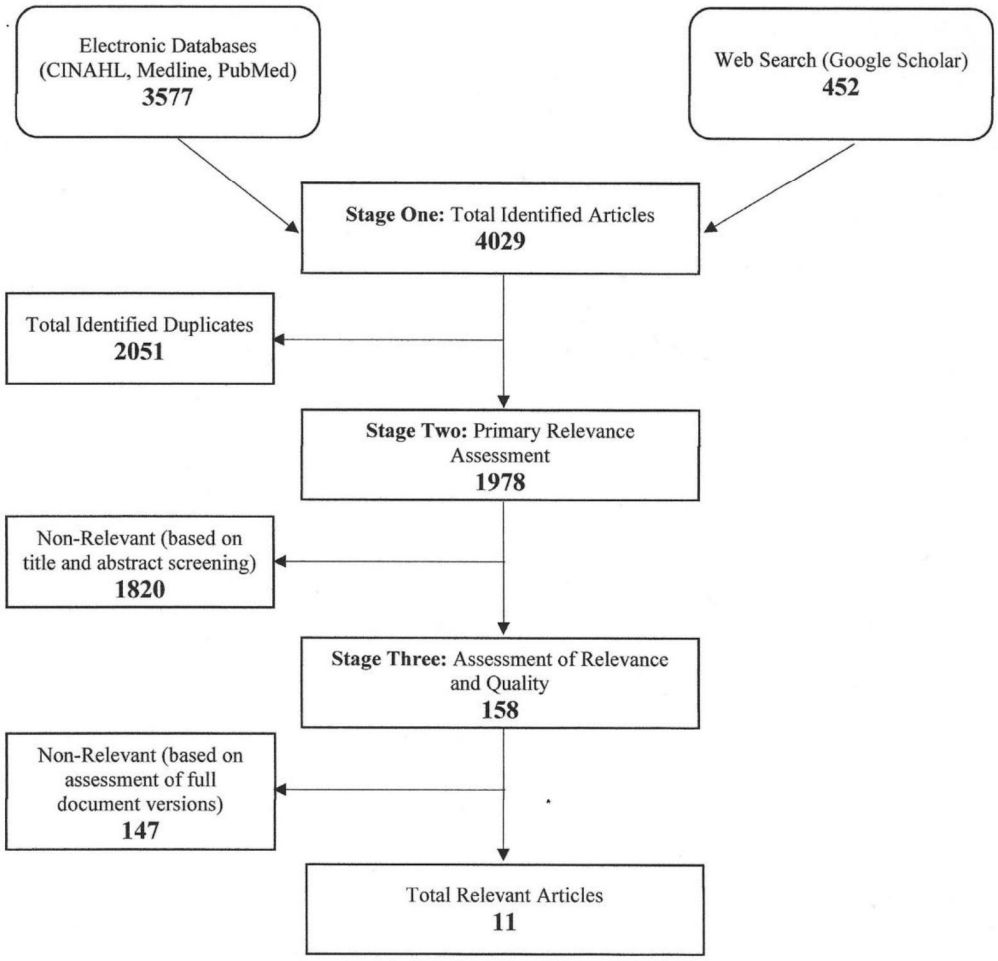
Table 2 *Inclusion and Exclusion Criteria*

Inclusion and exclusion criteria	
Inclusion • Years of publication: 2008 – 2018 • Publication language: English • Peer-reviewed articles • Data on PCPs (NPs and/or physicians) with or without separate data on other disciplines (i.e. oncologists, nurses) • Primary health care setting • Focus on ≥ 50% breast cancer survivorship • Female breast cancer survivors • Breast cancer survivors who have completed active cancer treatment (excluding hormonal therapy) • Location: Studies done in North America (including Canada and United States)	Exclusion • Publication older than 2008 • Non-translated articles • Non-reviewed articles • No data on PCPs (NPs and/or physicians) with only data on other disciplines (i.e. oncologists, nurses) • Secondary or tertiary care setting • Focus on < 50% breast cancer survivorship • Male breast cancer survivors • Breast cancer survivors who continue to receive active treatment including surgery, radiation therapy, and/or systemic therapy • Location: Studies done outside of North America

Literature Search

The search strategy for this integrative review was conducted in three stages and for that reason will be summarized according to each stage as reflected in Figure 2.

Figure 2 *Flow Diagram of Search Process*



(Adapted from Health Evidence, 2009)

Stage one. The first stage of the literature search involved gathering all potentially relevant articles from electronic databases. With a focus in nursing, medicine, and other health disciplines, the following databases were searched as they contained the most relevant literature for the purpose of the review: Cumulative Index of Nursing and Allied Health Literature (CINAHL), Medline, and PubMed. The Journal of Cancer Survivorship, The Nurse Practitioner, Canadian Family Physician, and Canadian Medical Association Journal were identified as relevant sources of literature as well, and were each indexed in the utilized electronic databases. Each database was searched with a limit to peer-reviewed articles written in English and

published between July 2008 and July 2018. In order to keep the literature search focussed and relevant to the research question, the following search terms were used in combination: “Nurse Practitioners,” “Physicians,” “Primary Health Care,” “Transitional Care,” “Oncologic Care,” “Health Care Delivery,” “Breast Neoplasms,” and “Cancer Survivors.” In addition to the search terms, the following keywords were used as well: “Breast Cancer Survivorship,” “Survivors of Breast Cancer,” “Breast Cancer Survivors,” “Survivorship care in Breast Cancer,” “Primary Care Provider,” and “Breast Cancer.” With the use of these search terms, keywords, and search limiters, the electronic databases yielded 3577 results including duplicates and non-relevant articles on July 31, 2018 (see Appendix B).

In addition to the electronic databases, Google Scholar was used in order to increase the comprehensiveness of this integrative review, and to confirm saturation of the literature search. In this search strategy, specific keywords relevant to the integrative review were used including: “Nurse Practitioners,” “Physicians,” “Primary Care Providers,” and “Breast Cancer Survivorship.” More specificity in the search was required for Google Scholar in order to keep the search focussed and the results relevant. With use of the main search terms, Google Scholar yielded 452 results on August 1, 2018, including duplicates and non-relevant articles (see Appendix C).

The search results were imported to EndNote reference management software. Using this software 2051 duplicates were identified from multiple sources, confirming data saturation, and leaving 1978 articles for review.

Stage two. Stage two of the literature search process involved the exclusion of non-relevant articles based on the aforementioned eligibility criteria. In this initial screening process

each article's title and abstract were viewed. The author identified 158 potentially relevant results after this process was complete.

Stage three. Stage three of the literature search process involved an assessment of the full document versions of each of the 158 articles for relevance and quality. According to Gray, Grove, and Sutherland (2017), all literature that meets eligibility criteria needs to be critically appraised for its strength of evidence to ensure high quality research is being used. With the use of the CASP tools (CASP, 2018) and Gray et al. (2017), a thorough appraisal was done on each study. Stage three identified 11 articles for use in the integrative review (see Appendix D) and excluded 147 articles that did not meet eligibility criteria or were not considered high quality evidence upon appraisal.

Literature Analysis

Critical analysis of the literature requires a thorough and unbiased examination of the main themes related to an issue and is imperative to produce strong research evidence in an integrative review (Torraco, 2005; Whittemore & Knafl, 2005). The literature analysis of this integrative review involved the data analysis method proposed by Whittemore and Knafl (2005) which consists of four phases including: 1) data reduction, 2) data display, 3) data comparison, and 4) conclusion drawing and verification. Conducting a literature analysis in separate stages can improve the internal validity of a review study by providing a more systematic approach.

Data reduction, display, and comparison. In the first phase of the analysis process, the data reduction phase, literature was divided into subgroups based on type of study (i.e. descriptive, qualitative, and mixed studies) as recommended by Whittemore and Knafl (2005) as a strategy to facilitate analysis. Since the focus of the review is on PCPs and breast cancer survivors, only data pertaining to NPs and/or physicians and this cancer survivor group were

extracted from each article. This data was then compiled into a literature review matrix table that identified the same pertinent data about each study separately (see Appendix D). This data display method allowed the author to compare the literature in a structured, organized manner, and subsequently, identify themes.

Conclusion drawing and verification. The final phase of the analysis process is to synthesize the information in order to provide integrated conclusions that answer the research question, therefore completing the review process (Whittemore & Knafl, 2005). After critical analysis of the literature, two overarching themes became evident related to barriers PCPs encounter in providing breast cancer survivorship care: provider-related barriers, and system-related barriers. The findings of this integrative literature review are presented in the following chapter.

CHAPTER FOUR

Findings

This integrative review explores the barriers that PCPs experience that influence the provision of evidence-based breast cancer survivorship care in the primary health care setting in Canada. The current chapter provides a synthesized analysis of the final cohort of 11 research studies reviewed for this integrative review to assist in answering the research question: what are the barriers that PCPs encounter in providing breast cancer survivorship care in the primary health care setting to women who have completed active cancer treatment in Canada? Although six of the 11 studies were conducted in the United States, the findings are relevant to the Canadian context as barriers to breast cancer survivorship care were consistent throughout the literature within Canada and the United States. It is from understanding issues pertaining to the PCPs' ability to deliver breast cancer survivorship care, that solutions to mitigate these barriers can be identified.

Analysis of Research Studies

Descriptive studies. Six of the articles analyzed for this integrative review are classified as descriptive studies. Each of these studies utilized surveys to obtain quantitative data. Key findings obtained from these studies included PCPs' preferences in breast cancer survivorship care models, PCPs' confidence in providing care to breast cancer survivors, and PCPs' knowledge of breast cancer survivorship care components.

Potosky et al. (2011) conducted a quantitative cross-sectional study which compared views of primary care physicians and oncologists on the following topics: preferred breast cancer survivorship care models; perceptions of primary care physicians' ability to deliver breast cancer survivorship care; self confidence in delivering breast cancer survivorship care; and cancer

surveillance practices. Of the 5275 providers randomly selected from the American Medical Association Physician Masterfile, 3596 individuals received a Survey of Physician Attitudes Regarding the Care of Cancer Survivors (SPARCCS) based on eligibility and willingness to participate. The surveys were mailed between March 2009 and December 2009, up to four times per non-respondent. This study had a good absolute response rate of 57.6% (Gray et al., 2017), with 1072 primary care physicians and 1130 oncologists (2202 participants).

The findings of this study were clear and are highlighted in the narrative as well as display tables. Data on physicians' preferred care models of breast cancer survivorship care included: 38% for shared-care model; 25% for oncologist-led care model; 22% for specialized clinic model; and 10% for a PCP-led care model. Although respondents least preferred a PCP-led care model, a majority of physicians (59%) "strongly" or "somewhat agreed" that they had the skills to provide breast cancer survivorship care related to the effects of the cancer and its treatment. In addition to this, 75% of physicians felt they had the skills to provide appropriate surveillance practices and half (51%) expressed that they were better suited to provide psychosocial support to breast cancer survivors than oncologists. In regards to confidence levels, only 40% of physicians felt confident in their ability to detect recurrent disease, 23% to manage physical effects of cancer and its treatment, and 41% to manage psychosocial outcomes of cancer and its treatment. Data concerning surveillance care practices highlighted that a significant proportion of physicians in the study recommended more surveillance tests than advised by the guidelines, suggesting a possible knowledge deficit.

The greatest strength of this study is that the Masterfile enabled the authors to achieve a nationally representative sample, which supported results that are generalizable to a large number of primary care physicians. The use of the SPARCCS instrument to collect data was also

a strength of the study because it was developed using a modified Delphi approach, as well as pilot tested and revised, which increased its validity. The authors also measured for response bias, which was not found based on the participant versus non-participant characteristics. A weakness of the study is that data was collected in 2009, therefore the results may not be as pertinent today. For improved validity, current studies are needed to support Potosky et al.'s (2011) findings.

For the purpose of this integrative review, the findings of this study offer insight into primary care physicians' preference for a shared-care cancer survivorship model, as well as their lack of confidence in providing different components of breast cancer survivorship care. A key finding from this study is that although a majority of primary care physicians felt they had the skills to provide care to breast cancer survivors, they least preferred a care model allocating them sole responsibility of breast cancer survivorship care. In addition to this, even though three-quarters of the participants felt they had the knowledge to conduct appropriate surveillance on breast cancer survivors, less than half of the same respondents felt confident in detecting recurrent disease and many deviated from recommended surveillance guidelines. Overall, this study found that many PCPs are uncertain about their ability to provide care to breast cancer survivors, and as such are lacking confidence in providing various components of breast cancer survivorship care. This study also suggests critical knowledge deficits in PCPs' ability to care for breast cancer survivors.

Cheung, Noone, Potosky, Virgo, and Stefanek (2013) performed a quantitative cross-sectional study that aimed to evaluate how physician attitudes and self efficacy regarding breast cancer survivorship care relate to their preference for care models. The authors used data from the SPARCCS sent out in the original nationally representative study done by Potosky et al.

(2011). The sample size was less than the overall sample collected by Potosky et al. (2011), consisting of 938 primary care physicians and 1088 oncologists, because participant data was excluded if providers did not answer the question relating to preferred cancer survivorship model, or if they chose more than one preference.

The results of this study were interesting. Data on physicians' preferred care models of breast cancer survivorship care included: 40% for shared-care model; 26% for oncologist-led care model; 18% for a specialized clinic model; and 10% for PCP-led care model. Similar to Potosky et al.'s (2011) findings, only a small number of physicians felt confident in monitoring for cancer recurrence (34%), and late and long-term effects of cancer and its treatment (19%). However, over half of the physicians (57%) "strongly" or "somewhat" agreed that they had the knowledge to provide breast cancer survivorship care, with 74% reporting an ability to detect recurrent cancers, and 50% reporting an ability to provide psychosocial support. Yet, only 32% of physicians felt they should be solely responsible for this type of care. The data focussed on by Cheung et al. (2013) included predictors of PCPs' preference for breast cancer survivorship care models. Those physicians who were ≥40 years old, were more likely to prefer an oncologist-led care model for survivorship care. However, those with greater cancer surveillance experience had significantly higher odds of supporting a PCP-led care model or shared-care model more than an oncologist-led care model. Not surprisingly, those respondents who felt PCPs should be responsible for breast cancer survivorship care, were more likely to support a PCP-led care model.

The main strength of this study is the generalizability of the results based on the nationally representative sample. Even though the study was based on secondary data from Potosky et al. (2011), the results of the study still proved to be useful since the key aim of this

study was different than Potosky et al.'s (2011) and new analyses were conducted on the data. A limitation of this study is the lack of transparency in the findings, as the authors reported data on PCPs' preferences for PCP-led care models and shared-care models as one care model option (51%) in the main body of the article. Therefore, although significant, physicians least preferring a PCP-led model of breast cancer survivorship care was not discussed. Fortunately, the authors did disclose data on preferences of these care models separately in the appendix.

The findings of this study are useful in answering the research question, as they garner further insight into PCPs' preferences for breast cancer survivorship care models, and new data on predictors of such preferences. An important piece of data distinctive to Cheung et al.'s (2013) study is that PCPs with prior or ongoing experience with breast cancer survivors, and who felt they should be responsible for breast cancer survivorship care, were significantly more likely to support a PCP-led care model or shared-care model versus an oncologist-led care model. Therefore, this study suggests physician knowledge and attitudes can facilitate or impede the provision of evidence-based breast cancer survivorship care in the primary health care setting.

Virgo, Lerro, Klabunde, Earle, and Ganz's (2013) quantitative cross-sectional study aimed to examine and compare barriers perceived by oncologists and primary care physicians related to caring for breast cancer survivors that are five years post active cancer treatment. The authors utilized the nationally representative survey data obtained by Potosky et al. (2011) to examine 10 self-reported barriers of oncologists and primary care physicians related to delivering cancer survivorship care. The study sample included 2202 participants as per Potosky et al. (2011).

The study offered significant findings. However, it is important to mention that some findings were excluded from this review as they did not relate to a Canadian context including

data pertaining to language barriers and inability of patients to pay for health care. The most common patient-related barriers to providing breast cancer survivorship care reported by primary care physicians included the following: patients refused care or were non-compliant with recommendations for care (59.6%); and patients requested more cancer surveillance testing than recommended by guidelines (53.3%). The most common provider-related barrier was worry over missing aspects of survivorship care (56.5%). In addition to this, 51.1% of physicians reported that they ordered more tests than recommended by guidelines in order to avoid medical-legal consequences of inadequate cancer surveillance. Moreover, 46.4% of physicians reported that they had inadequate knowledge and training to care for breast cancer survivors. Other barriers included role ambiguity (33.1%) and concern over duplicated care (47.7%). Not surprisingly, the more knowledge a physician felt they had on components of breast cancer survivorship care, the less likely they were to express uncertainty around their role and surveillance interventions.

This study had both weaknesses and strengths. Similar to Cheung et al. (2013) and Potosky et al. (2011), the findings were based on self-reported data, which may have skewed the results based on social desirability bias. Nonetheless, this study was well-laid out, easy to read, and captured pertinent data unreported by both Cheung et al. (2009) and Potosky et al. (2011). The data was also obtained from a nationally representative sample, therefore increasing the generalizability of the results.

This study is useful in answering the research question as it offers both patient specific and provider specific barriers to breast cancer survivorship care. It provides further insight as to why primary care physicians order more surveillance tests than recommended by guidelines, which disputes this issue being based solely on a knowledge deficit. First, Virgo et al. (2013) captured that breast cancer survivors are requesting more surveillance testing than recommended.

Second, physicians admitted to ordering more surveillance testing due to concern about missing a cancer recurrence. Regardless of these findings, further studies offering new data are required to validate this research as to present-day barriers. Also, a qualitative research approach may be useful in exploring the findings further, as well as acquiring new insights and providing a richer understanding of barriers to breast cancer survivorship care.

Nekhlyudov, Aziz, Lerro, and Virgo (2013) conducted a quantitative cross-sectional study that had two purposes: to compare PCPs' and oncologists' awareness regarding late and long-term effects associated with chemotherapy for breast cancer; and to see if there was an association between this awareness and physician characteristics. The authors utilized data from Potosky et al.'s (2011) original study that obtained survey data from a nationally representative sample of 2202 primary care physicians and oncologists.

The results of this study were significant. As mentioned by Potosky et al. (2011), the authors found that only 23% of physicians were "very confident" in their knowledge regarding late and long-term effects of breast cancer and its treatment. To add to this finding, only 6% of physicians reported awareness of all four late or long-term effects of cancer treatment, including peripheral neuropathy, cardiac dysfunction, premature menopause, and secondary malignancies, as they pertained to doxorubicin, cyclophosphamide, paclitaxel, and/or oxaliplatin. This study found a positive association between those reporting less confidence in providing breast cancer survivorship care, and those with less knowledge around the late and long-term effects of chemotherapy. It was also discovered that physicians' knowledge increased based on the number of breast cancer survivors they saw per year.

The main strength of this study is that it used a nationally representative sample, therefore increasing the generalizability of the results. The main limitation of the study is that it

only focussed on late and long-term effects of chemotherapy. The findings would have been more comprehensive if additional components of breast cancer survivorship care were assessed, such as awareness of psychosocial adverse effects of breast cancer and its treatment. Social desirability bias is also a possibility of this study due to the self-reported data.

Although this study, as well as Cheung et al.'s (2013) and Virgo et al.'s (2013) research, utilized the same data originally collected by Potosky et al. (2011), they all gleaned different information related to the research question. The results of Nekhlyudov et al.'s (2013) study are clear in that few PCPs are confident or knowledgeable in providing breast cancer survivorship care as it relates to managing the physical effects of cancer and its treatment. This is a significant barrier to breast cancer survivors' needs being met once transitioned back to their PCP after active treatment ends.

Smith, Murchison, Singh-Carlson, Alexander, and Wai (2015) conducted a well-organized Canadian quantitative cross-sectional study that sought to compare the perceptions of breast cancer survivors and primary care physicians in regards to the capacity of physicians to provide breast cancer survivorship care. It is important to note that the authors utilized secondary data from Smith et al. (2011) in the form of PCP surveys, although this was not clearly disclosed by the author. Therefore, the survey administration methods can be found in the description of Smith et al.'s (2011) study in the later part of this chapter. The data on the perceptions of breast cancer survivors were original to this study however. There were 2289 breast cancer survivors recruited based on eligibility criteria including: they spoke English, had completed active treatment, and had no indication of cancer. It was unclear if these participants were required to be discharged from their oncologist. Two different surveys were created and pilot-tested for the two groups of participants. However, the authors note that the survey

instruments were not rigorously validated, which could have improved the validity and reliability of the results. Of the participants, there was a 59% response rate for physicians as per Smith et al. (2011) and a 47% response rate for breast cancer survivors. The participant sample was relatively large, however there was potential for response bias due to the survey methodology used.

Data obtained from the surveys were summarized as frequencies and made transparent to readers by use of figures. Results indicated that almost 80% of primary care physicians described "good" or "adequate" confidence in their ability to manage all components of breast cancer survivorship care. Physicians were most confident in surveillance practices such as screening for recurrence, with 77% of respondents reporting a "good" ability in this care component. Whereas, physicians expressed least confidence by a "low" ability to deliver family counselling (24%), provide sex and body image counselling (26%), and manage lymphedema (24%). Although the breast cancer survivor participants were fairly confident in PCPs' ability to attend to all domains of breast cancer survivorship care, they were less confident than PCPs were overall. Breast cancer survivors were most confident in PCPs' ability to screen for recurrence (65%) and least confident in PCPs' competency to attend to the psychosocial aspects of care, such as family counselling (41%) or sex and body image counselling (36%).

Overall, the Smith et al. (2015) study is pertinent to the research question, as the results highlight that even though physicians are relatively confident in their ability to provide breast cancer survivorship care, they are least confident in psychosocial and physical (i.e. managing lymphedema) components of care. Data from breast cancer survivors concurs that PCPs' ability to provide psychosocial aspects of care is suboptimal. PCPs' high confidence in delivering surveillance components of breast cancer survivorship care differs from data obtained by

Potosky et al. (2011), which found a majority of respondents were not confident about screening for recurrence. However, this difference may be owing to the variation in wording used in the surveys, such as “good confidence” versus “very confident.” In sum, the findings of this study in combination with the previously discussed studies, suggest PCPs’ may not be highly confident in their ability to provide certain components of breast cancer survivorship care.

Luctkar-Flude, Aiken, McColl, Tranmer, and Langley (2015b) conducted a well designed Canadian quantitative cross-sectional study, with objectives to identify which aspects of breast cancer survivorship care were being implemented by PCPs, to explore knowledge gaps, and to assess the differences between NP and physician care delivery. Prior to conducting this study, the authors created evidence-based guidelines for breast cancer survivorship care by conducting a systematic review of available guidelines (Luctkar-Flude et al., 2015a). The closed-ended questionnaire used in this study was substantiated on this evidence-based guideline. The sample of PCPs were chosen based on a comprehensive list of experienced NPs and physicians who worked in primary health care settings within the South East Local Health Integration Network of Ontario. There were 321 PCPs eligible, and as such were mailed questionnaires. However, only 82 PCPs participated, giving this study a 25% response rate. The questionnaires provided demographic data, which found that most participants were female and practicing in urban settings. The external validity of this study is weak, due to the small sample size, participant characteristics, and potential for response bias.

Results indicated that less than half (46.4%) of the key guideline recommendations for breast cancer survivorship care were being implemented and 28.5% of those recommendations were unknown to PCPs. Implementation rates were higher for prevention (i.e. contraception, osteoporosis, weight management) and surveillance (i.e. mammogram) components of

survivorship care, and lower for management of long-term physical and psychosocial effects of cancer and its treatment. Those care components with lower implementation rates were also areas where knowledge gaps existed.

Luctkar-Flude et al.'s (2015b) study offers some solid evidence suggesting that there are existing deficits related to PCPs' knowledge in components of breast cancer survivorship care. First, comparable to Nekhlyudov et al. (2013), Potosky et al. (2011), and Smith et al. (2015b), knowledge and awareness regarding the physical and psychosocial effects of breast cancer and its treatment appear to be limited. Second, these findings along with Virgo et al.'s (2013) research, highlight that there is a significant proportion of key guideline recommendations for breast cancer survivorship care being missed. Each of these findings strongly emphasized knowledge or lack thereof, as an underlying barrier to the provision of evidence-based breast cancer survivorship care in the primary health care setting.

Qualitative Studies. Three of the studies retrieved from the literature search are classified as qualitative studies. These studies utilized focus groups or one-on-one interviews to obtain qualitative data. Key findings obtained from these studies included many of the same provider-related barriers described in the descriptive studies, with the addition of new data pertaining to system-related barriers and facilitators to breast cancer survivorship care.

Kantsiper et al. (2009) explored breast cancer survivors', PCPs' and oncology specialists' perspectives on their needs, priorities, and approach to breast cancer survivorship care. Convenience sampling was used to purposefully select 21 breast cancer survivors, 15 PCPs, and 16 oncology specialists from the United States. Data were collected from nine focus groups over a span of almost two years by the same two facilitators, which allowed the researchers to become immersed in the process and collect adequate amounts of data until saturation of themes was

obtained. Moreover, having the same two facilitators likely allowed for collection of data to occur in a consistent manner across focus groups. The group interviews were semi-structured, conducted face-to-face, and recorded verbatim. A qualitative thematic analysis was then used to explore the data by the two focus group facilitators and a social scientist with extensive experience conducting qualitative research. These methods of data collection and analysis were appropriate in meeting the qualitative objectives of the study. However, the accuracy of the findings could have been determined by use of member checking, which was not highlighted within the article.

Key findings of the study revealed provider-related barriers and system-related barriers to the provision of evidence-based breast cancer survivorship care in the primary health care setting. The main theme identified by PCPs was their ambivalence about having responsibility for breast cancer survivorship care. The data suggested that this ambivalence was linked with role confusion, confidence levels, and knowledge. Many respondents reported that they hardly became involved in components of breast cancer survivorship care because they assumed that patients were seeing an oncologist for any cancer related issues. Moreover, a majority of PCPs felt oncologists should have the responsibility of delivering breast cancer survivorship care, yet if required they felt they could assume this role. Pertaining to knowledge in components of breast cancer survivorship care, PCPs voiced concerns around cancer surveillance, and missing a cancer recurrence in patients. Many voiced fears of medical-legal consequences related to cancer follow-up. In addition to this, none of the respondents in the study routinely provided psychosocial support to breast cancer survivors, however it was unclear why this was. In regards to system-related barriers, themes related to time, survivorship care plans and communication with oncologists were presented. Firstly, PCPs reported that they felt challenged by the number

of primary care issues that emerge during time-limited appointments with patients, and could not possibly add in every component of breast cancer survivorship care. Secondly, some PCPs felt they would be more confident providing breast cancer survivorship care if they had written survivorship care plans to guide care. Finally, suboptimal communication with cancer specialists was regarded as a large barrier to PCPs caring for breast cancer survivors.

In regards to data obtained from breast cancer survivors, many expressed ambivalences about completing active cancer treatment. Being discharged from their cancer care team and transitioned back to their PCP left these breast cancer survivors feeling both anxious and abandoned. Breast cancer survivors perceived PCPs as not having a central role in breast cancer survivorship care and as such felt their needs as cancer survivors were not being met. Breast cancer survivors felt a written document such as a discharge letter or a survivorship care plan and ongoing communication between their PCP and oncologist would facilitate better coordination of their care after active cancer treatment ends.

This study is useful in answering the research question because it presented both provider and system-related barriers to the provision of evidence-based breast cancer survivorship care, including role ambivalence, workload issues, and perceived suboptimal oncologist support in place for PCPs. Data from breast cancer survivors confirmed many of the same barriers reported by PCPs. The qualitative method used to obtain data allowed for new themes to emerge that had not appeared in the aforementioned descriptive studies, such as system-related barriers. At the same time, this research reinforces barriers found in the studies already discussed including: preference for an oncologist-led survivorship care model; lack of confidence in providing care to breast cancer survivors; and knowledge deficits in components of breast cancer survivorship care.

O'Brien, Grunfeld, Sussman, Porter, and Mobilio's (2015) study was systematic and transparent in the entire research process. The authors' first objective was to gain an understanding of the experiences of family physicians in their role of providing breast cancer survivorship care in Canada. The second objective was to gain an awareness about the experience physicians have with cancer survivorship care plans and oncologist discharge letters. The authors chose a descriptive qualitative design in order to focus on the human experience and allow themes to emerge. The participants consisted of family physicians of women with breast cancer who had participated in a previous randomized controlled trial (RCT). An invitation to participate in the study was mailed to 123 purposefully selected family physicians. Although 50% of physicians did not respond and 11% declined, the authors felt they had adequate data saturation after interviewing 15% (18) of the eligible physicians. The sample size was diverse based on the participants' demographic characteristics. Interviews were semi-structured and conducted by one experienced team member, which kept the data collection process consistent. The interviews, which were conducted over the telephone and one-on-one, minimized the possibility of social desirability bias.

Results of this study were thought-provoking. In regards to a survivorship care plan, which consists of a record of care (i.e. summary of cancer and its treatment), reminder checklist for care (i.e. dates to recall patients for care) and breast cancer survivorship guidelines (i.e. prevention, surveillance, coordination, and intervention), most respondents voiced that a one-page record of care was the only useful aspect of these care plans. Most physicians found reminder checklists useless, as they used online systems with patients' Electronic Medical Records (EMR) to recall the patient. With regards to oncologist discharge letters, respondents had variable views regarding their value. More respondents were concerned about timely

ongoing communication with oncologists, rather than inadequate discharge letters. Equally important to these findings, physicians felt they were well-suited to provide breast cancer survivorship care, but indicated they were not comfortable taking over care until three to five years after diagnosis. They also perceived breast cancer survivorship care as limited to conducting CBEs and ordering mammograms, which in actuality is only attending to the surveillance components of care required (Luctkar-Flude et al., 2015a).

In sum, this study validates knowledge gaps related to components of breast cancer survivorship care as found in many of the previous studies (Kantsiper et al., 2009; Luctkar-Flude et al., 2015b; Nekhlyudov et al., 2013), and supports the concept that PCPs may be ambivalent in taking over care of breast cancer survivors after active cancer treatment is complete (Kantsiper et al., 2009; Virgo et al., 2013). Although most physicians in this study felt they were well-suited to provide breast cancer survivorship care, this finding may be due to them perceiving breast cancer survivorship care as only ordering annual mammograms and conducting CBEs. If care was delivered based on breast cancer survivorship guidelines it would not be as straightforward and as such, one may speculate that these PCPs would not feel as well-suited to care for breast cancer survivors.

Luctkar-Flude et al. (2018) conducted a transparent and clearly reported qualitative descriptive study that sought to understand barriers and facilitators related to PCPs implementing evidence-based breast cancer survivorship care in Canada. The authors used a combination of purposive and snowball sampling to recruit 10 physicians and 9 NPs from an area in Ontario that serves more than 500,000 individuals. A significant limitation of the study was the lack of diversity between the participants with 15 of the 19 PCPs being women. Data was collected in semi-structured, pilot-tested one-on-one interview sessions that were conducted by the same

researcher and recorded and transcribed verbatim. Data saturation was determined in this study due to the recurrence in themes, which improves the credibility of the results. Prior to coming to their conclusions, the authors maintained the rigour of their study by using peer review, member checking, and triangulation strategies.

Results were displayed in an easy to read table and included six themes related to barriers and facilitators of delivering breast cancer survivorship care including: inadequate educational preparation; provider anxieties; primary care burden; tools and technology; empowering survivors; and optimizing nursing roles. Respondents reported that they received no formal education on breast cancer survivorship care and therefore, they experienced challenges related to knowledge gaps and keeping up-to-date with evidence-based guidelines. PCPs had fears of medical-legal consequences related to patients falling through the cracks and as such, having cancer recurrence go unnoticed. Individuals with more confidence in providing care to breast cancer survivors were those with prior experience. Preferences in cancer survivorship care models were divided, with some PCPs feeling it was not their responsibility, and others voicing they were ideal candidates to assume such roles. In regards to system-related barriers, PCPs felt that their primary care workload would not accommodate the higher acuity care required for breast cancer survivors. Moreover, PCPs believed that breast cancer survivorship care would cause increased burden on administrative staff related to EMRs and recall procedures. Lastly, concern was voiced over inadequate access to oncologists for support.

This study is a new source of evidence that addresses the research question of this review. The provider-related barriers and system-related barriers found in this study are consistent with several other sources of research (Kantsiper et al., 2009; O'Brien et al., 2015; Virgo et al., 2013), improving the reliability and validity of the results. It is important to note that these qualitative

findings not only represent barriers to the provision of evidence-based breast cancer survivorship care, but also suggest facilitators to care.

Mixed-Methods Studies. The remaining two articles found for this integrative review are classified as mixed-methods studies. Data obtained from these studies included provider and system-related barriers in support of the aforementioned findings.

Smith et al. (2011) conducted a convergent parallel mixed-methods Canadian study for the purpose of assessing the confidence of primary care physicians in their ability to provide breast cancer survivorship care, and to explore strategies that physicians felt could improve their ability to provide survivorship care. A questionnaire, with both closed and open-ended questions was mailed to 1000 randomly selected physicians who cared for at least one breast cancer survivor who was discharged from BC Cancer between June 2007 and August 2008. Of those questionnaires 587 surveys were eligible for review, providing an adequate response rate of 59%.

The quantitative results of this study were meaningful. As previously mentioned in the findings of Smith et al. (2015), the questionnaires identified that physicians were most confident in conducting screening for recurrence, and least confident in counselling women on sex and body image, providing family counselling, and managing lymphedema. High confidence levels in screening for recurrence was significantly associated with increased numbers of breast cancer survivors seen by the physician, whereas there were no associations found for those care components PCPs are least confident providing (Smith et al., 2011). In addition to confidence levels, the study also explored possible system-related barriers to care. A high number of respondents (80%) conveyed that they “always” received a discharge letter from oncologists and 92% found them useful. Some PCPs (43%) preferred these discharge letters to be point-form, whereas others (38%) preferred both point form and detailed data. Even though most physicians

preferred point form discharge letters, interestingly they perceived a large range of information "very useful" in the discharge letters including: diagnosis and treatment summary (97%), recommended follow-up (96%), recommended adjuvant hormone therapy (92%), summary of active issues (85%), reminder checklist for follow-up (85%), summary of potential toxicities (84%), and prognosis (84%). Of least perceived use were evidence-based guidelines on breast cancer survivorship care (61%), and lists of community resources for breast cancer survivors (56%).

In regards to the qualitative data, the most common themes found were summarized in the article. The majority of respondents reported that they would like more information pertaining to hormonal therapy and surveillance components of breast cancer survivorship care. Physicians also voiced that they felt the transition of care from oncologists to PCPs could be improved with "complete information." One may hypothesize they want "complete information" on a discharge letter, including the most useful information previously discussed.

The study did have its limitations. The lack of detail concerning the participants' characteristics weakens the external validity of the study, as the authors were unable to confirm the generalizability of the results. Other limitations of the study included: the authors did not state how the open-ended qualitative data was analyzed; the results of this portion of the questionnaire were only briefly discussed; and a more comprehensive review of the qualitative data was not published in a separate article. Nonetheless, with the use of random selection and an adequate response rate, the quantitative data of this mixed-methods study provides reliable insight of primary care physicians' perceived strengths and weaknesses related to the provision of evidence-based breast cancer survivorship care.

The results of this study inform the research question, and further support the other research used for this integrative review. First, the more breast cancer survivors a PCP followed in practice, the more confident they were in providing surveillance components of care (Nekhlyudov et al., 2013; Smith et al., 2011). Second, PCPs wanted a wide range of "complete" discharge information from the oncologist (Kantsiper et al., 2009), whether that be provided on a discharge letter or a survivorship care plan. Finally, physicians wanted more information on surveillance components of breast cancer survivorship care after active cancer treatment ends.

Dawes et al.'s (2015) explanatory sequential mixed methods study explored PCPs' knowledge, attitudes, and confidence in providing breast cancer survivorship care in the United States. Out of the 115 PCPs eligible to participate in the study, including physicians, NPs, and physician assistants, 59 participated (51%). The small sample size, along with the small geographical region where recruitment took place in Los Angeles, were the main limitations of this study as they decreased the generalizability of the quantitative results. The authors utilized the National Cancer Institute's validated Survey of Physician Attitudes Regarding the Care of Cancer Survivors (SPARCCS) tool created by Potosky et al. (2011) to gather quantitative data related to the purpose of the study. The response rate was adequate at 51%. All participants who returned their survey were eligible to attend three sequential focus group sessions that included structured and open-ended questions. Out of the 59 eligible to attend, 12 to 25 PCPs were present at each session which is an adequate sample for the purpose of obtaining qualitative data.

The findings of this study were clearly reported. The authors found that PCPs were lacking confidence in their ability to perform breast cancer survivorship care as evidenced by only 25% of respondents being "very confident" in their ability to manage psychosocial effects of cancer and its treatment, 14% managing physical effects and 22% detecting recurrence. In

respect to knowledge, over half of the PCPs (63%) felt they had the skills to monitor for recurrence, however only 10% of respondents ordered surveillance testing that complied with breast cancer survivorship guidelines. In addition, less than half (39%) of the PCPs felt they had the necessary skills to provide other aspects of breast cancer survivorship care. Data on PCPs' preferred care models of breast cancer survivorship care found that only 10% of participants felt PCPs should be responsible for breast cancer survivorship care, as most preferred an oncologist-led model of care (40%), a specialized clinic model (28%), or a shared-care model (22%). Themes related to barriers for transition included timing, unfamiliarity with ongoing hormonal therapy regimens, and role ambiguity. Facilitators included additional training in cancer specific care, and survivorship care plans.

This research reports similar themes found in the other studies utilized in this integrative review and as such, further supports the validity of those findings as a comprehensive body of knowledge. Moreover, this study utilized the SPARCCS instrument, which was also used to obtain primary data by Potosky et al. (2011). The repeated use of the SPARCCS further contributes to the instrument's validation, because it produced the same results as Potosky et al. (2011) including PCPs' having low confidence levels and knowledge deficits related to breast cancer survivorship care, as well as PCPs' being least in favor of a PCP-led care model. In addition to supporting evidence found in other studies, new barriers were expressed including concerns around the timing of transitioning breast cancer survivors back to their PCPs, as well as knowledge deficits related to hormonal therapy. The findings of this research are valuable in further understanding barriers to PCPs' ability to deliver breast cancer survivorship care.

Summary of Findings

In summary, the research has indicated significant provider-related and system-related barriers to the delivery of evidence-based breast cancer survivorship care in the primary health care setting. PCPs' ambivalence over assuming care of breast cancer survivors is reflected in their preference for an oncologist-led or shared-care model (Dawes et al., 2015; Cheung et al., 2013; Kantsiper et al., 2009; Potosky et al., 2011), as well as their desire for transition of care to occur much later than what is expected in a PCP-led model of breast cancer survivorship care (Dawes et al., 2015; O'Brien et al., 2015). Breast cancer survivorship guidelines such as those devised by Luctkar-Flude et al. (2015a) and Sisler et al. (2016) have attempted to increase PCPs' confidence in caring for this patient population. However, adherence to guidelines and associated recommendations remains low (Dawes et al., 2015; Luctkar-Flude et al., 2015b; O'Brien et al., 2015; Potosky et al., 2011; Virgo et al., 2013), as does knowledge in components of breast cancer survivorship care (Dawes et al., 2015; Kantsiper et al., 2009; Luctkar-Flude et al., 2015b; Luctkar-Flude et al., 2018; Nekhlyudov et al., 2013; O'Brien et al., 2015), and confidence in caring for breast cancer survivors (Cheung et al., 2013; Dawes et al., 2015; Luctkar-Flude et al., 2018; Nekhlyudov et al., 2013; Potosky et al., 2011). The evidence retrieved further indicates system-related barriers including: increased burden in primary health care settings (Kantsiper et al., 2009; Luctkar-Flude et al., 2018); and inconsistent communication, support, and transition from oncologists (Kantsiper et al., 2009; Luctkar-Flude et al., 2018; O'Brien et al., 2015; Smith et al., 2011). In sum, provider and system-related barriers confound the provision of evidence-based breast cancer survivorship care in the primary health care setting. These findings will be further examined as they relate to solutions to mitigate these barriers in the following discussion and recommendations chapter.

CHAPTER FIVE

Discussion and Recommendations

The research evidence presented in the findings chapter has provided the basis for numerous insights into my research question. This chapter will further address those research findings by first discussing provider-related barriers including PCPs' knowledge and attitudes. Secondly, system-related barriers will be discussed including PCPs' workload and support systems in place. Finally, as this is the main utility of the research findings, strategies to overcome the identified barriers will be explored throughout this chapter in order to pave the way for new research and progress in breast cancer survivorship care.

Provider-Related Barriers

Provider-related barriers are both personal to the provider and to a large extent modifiable. Identifying and overcoming provider-related barriers are the first steps in improving the delivery of breast cancer survivorship care in the primary health care setting. Addressing system-related barriers to breast cancer survivorship care without first identifying personal attitudes and abilities of PCPs to provide this form of specialized care would most certainly be challenging. The issue would be that even if every system-related barrier was overcome in a practice setting, the care of breast cancer survivors would remain suboptimal if the PCP continued to be challenged by personal barriers. Therefore, the initial discussion will focus on provider-related barriers gleaned from the research findings including PCP knowledge deficits and attitudes regarding breast cancer survivorship care.

Knowledge. Knowledge deficits among PCPs are a key barrier to breast cancer survivorship care that necessitates improvement. It is important to note that four of the eleven studies utilized in this integrative review found that over 50% of PCPs reported they had the

overall knowledge to provide breast cancer survivorship care including Cheung et al. (2013), Potosky et al. (2011), Smith et al. (2015), and Virgo et al. (2013). However, Potosky et al. (2011) and Virgo et al. (2013) found evidence suggesting otherwise based on the significant number of PCPs ordering inappropriate surveillance testing as per the evidence-based guidelines for breast cancer survivorship care. Furthermore, Nekhlyudov et al. (2013) found that the less confident a PCP is in providing breast cancer survivorship care, the less knowledge they have on this type of care. Although a majority of Cheung et al.'s (2013) and Potosky et al.'s (2011) participants felt they had the skills to provide breast cancer survivorship care, only a small number of those same participants expressed confidence in doing so. In other words, even if one perceives an ability to provide components of breast cancer survivorship care it does not mean evidence-based care is being provided or that the underlying knowledge to provide that care exists. Nevertheless, without adequate knowledge concerning the impacts of breast cancer and its treatment, as well as awareness of evidence-based guidelines, numerous components of breast cancer survivorship care are being missed. The research evidence indicates that this knowledge deficit is linked to educational preparation, self awareness, and the overall experience PCPs have with breast cancer survivors in practice, which will be further discussed in the following paragraphs.

Education. Firstly, the educational programs for PCPs may not support foundational knowledge required to care for breast cancer survivors. The studies done by Kantsiper et al. (2009), Luctkar-Flude et al. (2018), and Virgo et al. (2013) highlight that many PCPs have no formal education on the effects of breast cancer and its treatment, thus making it difficult to provide breast cancer survivorship care in practice. These studies recognize that most entry-level NPs and physicians do not have an adequate knowledge base to support evidence-based care of breast cancer survivors. Therefore, integrating breast cancer survivorship education in the

program curricula of the institutions training NPs and physicians could increase PCPs' knowledge and confidence in caring for breast cancer survivors in practice.

In conjunction to a change in program curricula, due to the rapidly evolving nature of breast cancer care it is also imperative for PCPs to have continuing education opportunities. The focus of this education should be on components of breast cancer survivorship care that PCPs appear to be least confident in providing such as the psychosocial and physical consequences of breast cancer and its treatment (Dawes et al., 2015; Kantsiper et al., 2009; Luctkar-Flude et al., 2015b; Luctkar-Flude et al., 2018; Potosky et al., 2011; Smith et al., 2015), and those components in which PCPs are lacking knowledge, such as evidence-based surveillance practices (Dawes et al., 2015; Potosky et al., 2011). The literature indicates that offering a wide range of education formats including webinars, lunch-and-learns, and continuing medical education events and workshops would best meet the diverse learning needs and availability of PCPs (Kantsiper et al., 2009; Luctkar-Flude et al., 2018).

Awareness. It is important to note that lacking knowledge in certain subject matter is only modifiable if the PCP is aware of that deficit. Luctkar-Flude et al. (2015) and O'Brien et al. (2015) emphasized that unbeknownst to many of the PCPs involved in their studies, numerous components of breast cancer survivorship care were being missed. Further insight into this issue is provided by Dawes et al. (2015) and Potosky et al. (2011), who found PCPs were significantly deviating from the evidence-based guideline recommendations for surveillance practices, which could lead to more harms than benefits for the breast cancer survivor. The literature suggests that this lack of awareness is in part due to PCPs not being cognizant of the evidence-based guidelines available to direct practice (Dawes et al., 2015; Luctkar-Flude et al., 2018; O'Brien et al., 2015), such as national guidelines (Luctkar-Flude et al., 2015a; Sisler et al., 2016) or

provincial guidelines (Alberta Health Services, 2015; BC Guidelines, 2013). These studies emphasize the importance of knowledge translation, because access to and uptake of evidence-based guidelines is vital to provide optimal patient care.

Knowledge translation is defined by the Canadian Institutes of Health Research (2016) as "…a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products, and strengthen the health care system" (para. 4). There are numerous knowledge translation strategies to increase the use of evidence-based guidelines in breast cancer survivorship care. Firstly, it is important to engage PCPs by allowing them to identify types of guidelines on breast cancer survivorship care they would find useful in practice. As noted by Ali, Roffe, and Crome (2012), stakeholders need to be involved at the beginning of research planning so that the study can better meet the needs of the people who are going to be affected by its outcome and thus, increase the uptake of research findings in practice including evidence-based guidelines. Secondly, PCPs need to be involved in reviewing the research data and identifying barriers to implementing the recommendations highlighted in the findings. For example, evidence-based guidelines may need to be refined by way of contextualization before dissemination in order to overcome barriers of research uptake by stakeholders, therefore increasing the likelihood of knowledge translation (Graham et al., 2006; Mold & Peterson, 2005). Thirdly, preferred methods of research dissemination need to be identified by stakeholders in order to improve access and utilization of the research findings in practice (Straus, Tetroe, & Graham, 2009). If knowledge translation strategies are employed to disseminate novel research on breast cancer survivorship care including evidence-based

guidelines, there is a better probability of PCPs accessing these resources and in turn building their awareness, knowledge, and confidence in caring for breast cancer survivors.

Experience. Beyond access to further education and evidence-based guidelines, PCPs require experience with breast cancer survivors in order to broaden their abilities to manage these patients. Not surprisingly, the more exposure to breast cancer survivors a PCP has, the greater their confidence in caring for this population (Cheung et al., 2013; Luctkar-Flude et al., 2018; Nekhlyudov et al., 2013; Smith et al., 2011; Virgo et al., 2013). Therefore, a key barrier to the provision of evidence-based breast cancer survivorship care in the primary health care setting is PCPs not having adequate numbers of breast cancer survivors in their practice, and in turn, not having the opportunity to develop expertise in providing this form of care.

A common theme throughout the research evidence is that the majority of PCPs are least confident in managing the psychosocial and physical effects of cancer and its treatment and most confident with the prevention and surveillance components (Dawes et al., 2015; Kantsiper et al., 2009; Luctkar-Flude et al., 2015b; Luctkar-Flude et al., 2018; Potosky et al., 2011; Smith et al., 2015). A correlation found in the literature is that the more experience a PCP has with providing certain components of breast cancer survivorship care, the more adept they are at providing this care (Luctkar-Flude et al., 2015b). Therefore, one may hypothesize that PCPs have more confidence in prevention and surveillance practices as these components of breast cancer survivorship care have a large role in primary health care settings in general, which gives PCPs more experience in these matters. Whereas, many of the physical and psychosocial effects of breast cancer survivors are more specific to the cancer and treatment itself, necessitating a larger breadth of knowledge and expertise.

PCPs involved in the care of breast cancer survivors require a high degree of expertise in caring for this population, similar to PCPs involved in caring for those during active breast cancer treatment. However, the standards of training and experience are different for those PCPs caring for breast cancer patients versus breast cancer survivors. PCPs working with breast cancer survivors are not required to have any additional training in cancer care, whereas additional training to become a General Practitioner in Oncology (GPO) or, in BC, a Nurse Practitioner in Oncology (NPO) is a requirement for those PCPs caring for patients in the active treatment phase of the cancer care trajectory (The Canadian Association of General Practitioners in Oncology [CAGPO], 2019). Having an understanding of breast cancer and its treatment is foundational knowledge required to care for those who are receiving active cancer treatment, as well as for cancer survivors.

Perhaps the same standards of training and experience should be expected of PCPs caring for women with breast cancer in both treatment and survivorship. A system in which breast cancer survivors are followed by a subset of PCPs with specialized and advanced education in cancer care, could better facilitate evidence-based breast cancer survivorship care in the primary health care setting. To clarify, even though these PCPs would not be involved in managing active cancer treatments, they still require an understanding of the treatment these women are receiving as it is highly linked to the chronic, late, and/or permanent effects that need to be monitored in the survivorship phase of the cancer care trajectory. In addition to this foundational knowledge, these PCPs would need additional training focussed on cancer survivorship care related to post active cancer treatment prevention, surveillance, intervention, and coordination. To be clear, the role of these PCPs with expertise in cancer care would not be to function in the same role as a GPO and/or NPO, whose purpose is to provide cancer treatment such as systemic therapy (i.e.

chemotherapy) in collaboration with oncologists in tertiary cancer centres. Rather, their primary purpose would be to provide care to breast cancer survivors within a primary health care context. Thus, these diverse providers would have the same foundational knowledge in cancer care, but different roles and settings in which this knowledge is applied.

Nurse practitioners. In recommending the creation of a subset of PCPs with specialized and advanced education in cancer care, it is also important to determine if one type of PCP is better suited for the role than another. Although NPs and physicians have differing educational backgrounds, the literature suggests that they provide comparable care as evidenced by equivalent health outcomes in breast cancer survivors (Cooper et al., 2010; Kenison, Silverman, Sustin, & Thompson, 2015), and similar implementation rates of breast cancer survivorship guidelines (Luctkar-Flude et al., 2015b). However, some evidence also indicates that breast cancer survivors experience increased satisfaction with care provided by a NP versus a physician (Cureton, Pritham, Royce, & Zahns, 2009; Mayer et al., 2012).

Even though NPs and physicians have many similarities in scope of practice and role in primary health care, ideological differences in their care approach may position NPs to better meet the unique needs of patients in the survivorship phase of the cancer care trajectory. For example, NPs have a nursing background strongly rooted in the holistic care approach, which promotes a form of care that is essential to meet the multidimensional needs of breast cancer survivors (IOM, 2006; Ng, Ong, Jegadeesan, Deng, & Yap, 2017). Furthermore, nursing models of practice have a strong focus in health promotion and disease prevention, whereas medical models of practice often have a narrower focus on the treatment of disease (DiCicco-Bloom & Cunningham, 2015). A large component of breast cancer survivorship care is the use of health promotion and disease prevention to help women achieve health as it relates to overall physical,

emotional, mental, and social wellbeing, rather than achieve health as solely the absence of disease. In other words, care that is provided based on the nursing philosophy is care that facilitates breast cancer survivorship care. The unique attributes of a NP strongly suggest that they are well suited to provide optimal breast cancer survivorship care, and without question should have a central role in caring for this high need population (Cureton et al., 2009; Mayer et al., 2012).

In addition to NPs' grounding within the philosophical tenets of nursing, serving vulnerable patients, such as those involved in the cancer care trajectory, is in line with many of the current roles undertaken by NPs across Canada (Canadian Federation of Nurses Unions [CFNU], 2018). NPs are often utilized to fill a void in Canada's primary health care system and to work with underserved populations in the most need (CFNU, 2018). Since the evidence found in this integrative review identified that there is a gap in breast cancer survivorship care, perhaps the growing number of NPs in Canada (Canadian Nurses Association, 2019) could help close this gap in care.

The concept of a NP-led model of cancer survivorship within a primary health care context is not new. However, this NP role is currently underutilized in Canada based on available data. The first NP-led model of cancer survivorship care in Canada was developed in Toronto in 2012, specifically for survivors of colorectal cancer (North York General, 2017; Ruffell, n.d.). This survivorship program is independently run by two NPs with specialized education in cancer care. In addition to the Toronto program, in 2013 BC Cancer created a Survivorship Nurse Practitioner Program with the purpose of utilizing NPs with advanced education in cancer care to provide full-spectrum primary health care to cancer survivors who have completed active cancer treatment and do not have a regular PCP to transition back to (BC Cancer, 2019; Provincial

Health Services Authority [PHSA], 2013). Based on available data there are only three NPs currently involved in this BC Cancer program, all located in the Lower Mainland of BC (BC Cancer, 2019).

With only a small number of NPs involved in survivorship care in Canada, this specialized role is not being sufficiently utilized as a strategy to improve the cancer survivorship experience for breast cancer survivors. At the same time, there is little available data on how effective this NP role is in closing the gap in cancer survivorship care in Canada. The only study available on this concept was done in the United States by McCabe et al. (2016) who found NP-led cancer survivorship clinics as a beneficial strategy to deliver optimal care to cancer survivors in accordance to the IOM's (2006) standards of care. Future research efforts should be taken to further identify the effectiveness of NPs in a cancer survivorship role within a primary health care context and how best they can be incorporated into Canada's health care system.

There are barriers to establishing a role for NPs in cancer survivorship care in Canada and therefore, having this recommendation come to fruition. Firstly, approval and funding of such a role would have to be made by key stake-holders, such as regional and provincial health authorities. Approval would require strong evidence of a recognized need, buy-in of key stake-holders, and the appropriate resources to implement the role. Secondly, cancer care training with a focus on cancer survivorship would have to be created for NPs to take in Canada, as the expectation would be that they become cancer survivorship experts. Thirdly, issues recruiting NPs with an interest in obtaining specialized education in cancer care to every community in need of this resource would likely also be a problem, as many NP positions in rural and remote communities remain unfilled for extended periods of time (Auditor General of British Columbia,

2018). Lastly, many patients with a strong rapport with their PCPs may not want to be transitioned to a different PCP after their active cancer treatment ends.

Due to these potential barriers, as well as the growing population of breast cancer survivors, it would be unrealistic to expect every one of these women to be followed by a NP with expertise in cancer survivorship care. At the same time, any number of NPs with this expertise is likely to contribute to improving care of breast cancer survivors overall. The role has potential to have far reaching effects on all primary health care settings through its contribution to interdisciplinary teams. The fact of the matter is, a two-pronged approach to facilitate evidence-based breast cancer survivorship is required, with both the utilization of NPs with specialized and advanced education in cancer care, and generalist PCPs who would continue their essential role in caring for breast cancer survivors. Consequently, all entry-level PCPs would still require the basic education and awareness to care for this population, as well as hopefully buy-in to a PCP-led model of breast cancer survivorship care.

Attitudes. The attitudes of PCPs, as they relate to having the responsibility to care for breast cancer survivors, was identified in the research findings as a significant barrier of breast cancer survivorship care that currently requires a change. In order for PCPs to meet the expectation that they take over care of breast cancer survivors once cancer treatment is complete, they must buy-in to a PCP-led model of breast cancer survivorship care and have more clarity over their significant role in caring for breast cancer survivors. The following paragraphs will discuss the research findings as they relate to PCPs' preferences in models of breast cancer survivorship care, as well as PCP role ambiguity and how these factors pose a significant challenge to the care of breast cancer survivors in the primary health care setting.

Preference in care model. In order to optimize PCPs' attitudes regarding breast cancer survivorship care it will be imperative to change their preference in care model. Dawes et al. (2015), Cheung et al. (2013), Kantsiper et al. (2009), and Potosky et al. (2011) found that most PCPs' preferred an oncologist-led care model, shared-care model, or specialized clinic model of breast cancer survivorship care over a PCP-led care model. The research evidence highlighted numerous reasons for PCPs' ambivalence in assuming a primary role in the care of breast cancer survivors. Firstly, this preference appeared to be strongly tied to PCPs experience with breast cancer survivors, and thus confidence in their ability to care for this population. Not surprisingly, Cheung et al. (2013), Luctkar-Flude et al. (2018), and Nekhlyudov et al. (2013) found that PCPs with greater experience caring for breast cancer survivors were significantly more likely to support a PCP-led care model. Secondly, studies done by Kantsiper et al. (2009), Luctkar-Flude (2018), and Virgo et al. (2013) emphasized PCPs' concern regarding the medicolegal repercussions of having primary onus of monitoring for and perhaps missing a cancer recurrence. This fear is not unreasonable given that the process of diagnosis is recognized by the World Health Organization as an area of clinical practice that has a high risk for error (Singh, Schiff, Graber, Onakpoya, & Thompson, 2017). These key findings further support a system in which breast cancer survivors are seen by a subset of PCPs with more expertise in cancer care. However, additional education, improved uptake of evidence-based guidelines, and more confidence has the potential to enhance any PCPs' desire to care for breast cancer survivors. Lastly, and perhaps most importantly, many PCPs expressed significant system-related barriers that do not support a PCP-led model of breast cancer survivorship care, which will be discussed later in this chapter.

Beyond acknowledgment of provider and system-related barriers that influence some PCPs' aversion to a PCP-led model for breast cancer survivorship care, it is important to recognize reasons why this model of care is desirable in order to generate more buy-in from PCPs. To start with, it may better meet the needs of breast cancer survivors in comparison to other care models. Cancer treatment is best delivered by an oncologist in a specialized tertiary care setting, because the focus is on disease control and/or eradication. However, the emphasis of breast cancer survivorship should not be on disease, but rather on health and the quality of one's life. Therefore, breast cancer survivorship care may be best delivered by a PCP in a primary health care setting, because both the provider and setting encourage this important shift in focus beyond disease. A PCP-led care model allows breast cancer patients to become breast cancer survivors. In addition to this, these women often have built a good rapport with their PCP over the many years of seeing them. As a result, the PCP has likely developed knowledge of the numerous contexts inherent to the breast cancer survivor that can support not only evidence-based care, but also holistic, patient-centred care. In this regard, continuity of care is not lost during the transition of these women back to their PCPs, but perhaps found again after being discharged from a cancer care system in which patients are likely seeing a myriad of different health care providers (Canadian Partnership Against Cancer, 2018). A PCP-led care model allows breast cancer survivors to have a consistent health care provider navigating their care and attending to their needs, which can lead to improved health outcomes and decreased role ambiguity.

Role ambiguity. Role ambiguity as described by Dawes et al. (2015), Kantsiper et al. (2009), and Virgo et al. (2013) is another key barrier to the provision of evidence-based breast cancer survivorship care. As mentioned, there are numerous components of breast cancer

survivorship that are involved in the care of a cancer survivor including prevention, surveillance, intervention, and coordination services. The literature found that PCPs were not attending to certain components of breast cancer survivorship care because they assumed aspects of care were being dealt with by other providers such as oncologists (Kantsiper et al., 2009). This key finding is concerning for numerous reasons including one's cancer recurrence going unnoticed due to nobody being involved in surveillance components of care. This issue of role ambiguity is in part connected to suboptimal communication between PCPs and oncologists during the transition of breast cancer survivors back to the primary health care setting once active cancer treatment ends, and will be discussed in the following section of this chapter.

System-Related Barriers

Acknowledging system-related barriers further describes current issues opposing the provision of evidence-based breast cancer survivorship care within a primary health care context. Furthermore, looking at what is not working in the current systems in place for the care of breast cancer survivors provides a more comprehensive representation of the change that needs to occur. Thus, the remainder of this chapter will discuss system-related barriers discovered in the research evidence including workload demands and perceived suboptimal oncologist support, as well as strategies to overcome these barriers.

Workload. The demanding nature of PCPs' workload in a primary health care context was a common barrier discussed within the research evidence. Not surprisingly, workload as a barrier did not present itself in the deductive approaches seen in the quantitative studies. Rather this data became apparent within the qualitative studies of Kantsiper et al. (2009) and Luctkar-Flude et al. (2018), whose participants voiced concern over limitations in time to provide breast cancer survivorship care. PCPs already feel challenged by patients with numerous chronic health

issues (Kantsiper et al., 2009), let alone meeting the multidimensional needs of breast cancer survivors within a time-limited appointment. It is apparent that current systems and/or processes in place may not be appropriate, especially given the increasing number of breast cancer survivors in Canada.

Due to the growing number of breast cancer survivors and the current role of PCPs in providing care to this population, it is advantageous for clinics to adopt a team-based approach to primary health care to decrease workload demands. The literature suggests that a team-based approach could facilitate evidence-based breast cancer survivorship care in the primary health care setting (Alberta Health Services, 2015; Luctkar-Flude et al., 2015a; Luctkar-Flude et al., 2018), especially for PCPs who do not have specialized and advanced education in cancer care. Team-based care is defined as:

> "…the provision of health services to individuals, families, and/or their communities by at least two health providers who work collaboratively with patients and their caregivers—to the extent preferred by each patient—to accomplish shared goals within and across settings to achieve coordinated, high-quality care" (Mitchell et al., 2012, p. 5).

A team-based approach to care is much more likely to facilitate evidence-based breast cancer survivorship care rather than a setting in which PCPs are working in silos. This is especially true since the research evidence highlighted that a majority of PCPs prefer not to have sole responsibility of caring for breast cancer survivors (Dawes et al., 2015; Kantsiper et al., 2009; Luctkar-Flude et al., 2018; Potosky et al., 2011).

A team-based approach to care alleviates provider and system-related barriers including knowledge deficits and workload demands, because it allows an interdisciplinary team of health care providers with diverse backgrounds and areas of expertise to tend to the needs of breast

cancer survivors as a team. For example, Kantsiper et al. (2009) found that PCPs did not routinely provide psychosocial support to breast cancer survivors they were caring for. Although the study did not explicitly identify why this was, it is reasonable to assume that time limitations and knowledge deficits combined could create a barrier to managing the psychosocial consequences of breast cancer including distress, anxiety, and depression. As recommended by guidelines for breast cancer survivorship care (Alberta Health Services, 2015; BC Guidelines, 2013; Luctkar-Flude et al., 2015a; Sisler et al., 2016), mental health clinicians who specialize in counselling services could be utilized to better meet the psychosocial needs of breast cancer survivors. Physiotherapists are another interdisciplinary team member who may play a valuable role in breast cancer survivorship care, as exercise is vital in both the prevention of recurrent cancers and improvement of cancer and treatment related fatigue (Alberta Health Services, 2015; Luctkar-Flude et al., 2015a). In addition to these providers, dieticians could also be utilized for those breast cancer survivors interested in improving their health and preventing cancer recurrence through nutrition (Vander Meer, Vallance, Ball, Johnson, 2017). Financial hardships are also often a consequence of breast cancer and its treatment and as such, social workers may have a valuable role in breast cancer survivorship care.

A team-based approach to care facilitates the delivery of holistic, patient-centered, evidence-based breast cancer survivorship care, which is the foundation of optimal patient outcomes. However, access to interdisciplinary teams may not be as straightforward in rural and remote communities (Olson et al., 2014). In these cases, services provided by telehealth may have a role in better meeting the needs of breast cancer survivors. However, this topic exceeds the scope of this paper and further exploration and research is needed on how best to meet the needs of rural- and remote-living breast cancer survivors. Either way, fragmented survivorship

care secondary to PCP knowledge deficits and workload demands is unjustified in a system that recognizes the value of a team-based approach to care.

Oncologist Support. Suboptimal support from oncologists was highlighted in a number of studies as a significant barrier for PCPs to take over breast cancer survivorship care, and provide evidence-based care to breast cancer survivors (Kantsiper et al., 2009; Luctkar-Flude et al., 2018; O'Brien et al., 2015). The most common complaints raised by some PCPs in these studies were that verbal communication with oncologists tended to be lacking in timeliness and written communication tended to be incomplete. A lack of timely and effective communication between oncologists and PCPs can create numerous issues that compromise the care of breast cancer survivors within a primary health care context.

The transition of breast cancer survivors from oncologists to PCPs after active cancer treatment ends can pose a barrier to continuity of care if communication is limited. Without written communication from oncologists in the form of a discharge letter, PCPs are likely unaware of their newfound responsibility to follow a breast cancer survivor, which can lead to PCP role ambiguity (Dawes et al., 2015; Kantsiper et al., 2009; Virgo et al., 2013). Moreover, suboptimal communication during the transition of breast cancer survivors back to their PCPs can lead to significant components of breast cancer survivorship care being missed and thus, fragmented care and poor patient outcomes.

The research evidence suggests that this transition can be improved with better communication with oncologists. In regards to written communication, a key piece of information required to adequately care for a breast cancer survivor is a discharge letter from the oncologist that highlights crucial information regarding the imminent transfer of care, as well as the patient's diagnosis, cancer treatment, and summary of active issues requiring ongoing follow-

up or intervention (Smith et al., 2011). These are components of care that cannot be found in evidence-based guidelines as they are unique to an individual breast cancer survivor. If done well, a discharge letter from oncologists could significantly decrease PCPs' ambiguity around what type of follow-up care is needed for each diverse patient and what their expected role is in that care. It is important to note that one of the studies in this review provided evidence that a high number of PCPs always receive a discharge letter from oncologists (Smith et al., 2011). At the same time, this study also found that PCPs felt having more complete information provided by oncologists would better facilitate breast cancer survivorship care. Therefore, beyond receiving a discharge letter from oncologists, it is important that the letter contains the most pertinent information related to the breast cancer survivor.

Along with improved written communication where it is needed, strategies aimed at enhancing timely verbal communication between oncologists and PCPs is vital to improving breast cancer survivorship care. It is important to note that only three of the five studies on system-related barriers to breast cancer survivorship care reported an issue with verbal communication with oncologists (Kantsiper et al., 2009; Luctkar-Flude et al., 2018; O'Brien et al., 2015). Therefore, an improvement in communication between providers does not apply to every setting. For those settings where it does apply, a key strategy to improve timely communication could be to utilize NPs in the cancer survivorship role. Since the expectation would be that these NPs are experts in cancer care, part of their role could involve providing consultative support to PCPs without this advanced knowledge. This could decrease the need for PCPs to require prompt access to oncologists. The use of NPs with specialized education in cancer care could also potentially improve communication between tertiary and primary health care settings, as these PCPs likely have already developed strong working relationships with

communities' oncologists. Nonetheless, timely access to consultation with a health care provider with advanced knowledge in cancer care facilitates buy-in of a PCP-led care model and evidence-based care of breast cancer survivors.

Summary of Recommendations

The review of the relevant literature demonstrated various barriers PCPs encounter in providing breast cancer survivorship care in the primary health care setting. In order to improve the care of breast cancer survivors, strategies must be aimed at overcoming those barriers that currently exist.

Addressing provider-related barriers, including PCP knowledge deficits and attitudes, is warranted. The first recommendation to overcome these barriers includes incorporating breast cancer survivorship education in the curricula of undergraduate and graduate programs to ensure PCPs have the foundational knowledge to care for breast cancer survivors in entry-level practice. In addition to this, ensuring PCPs have access to continuing education opportunities on components of breast cancer survivorship care is essential to help PCPs remain up-to-date on this type of care as it continues to evolve. In regards to evidence-based guidelines, knowledge translation strategies should be employed when new guidelines are created in order to improve access and uptake of these research findings by PCPs in practice. Furthermore, the use of NPs trained in both cancer treatment and survivorship could have a pivotal role in improving breast cancer survivorship care in the primary health care setting. Therefore, similar to breast cancer patients receiving active cancer treatment, breast cancer survivors could be seen by a subset of PCPs with additional education, awareness, experience, and interest in caring for this population of women.

Identifying system-related barriers including PCP workload and oncologist support are also necessary. A key recommendation to overcome these barriers includes a team-based approach to care, which is a reasonable alternative to PCPs working in silos. A team-based approach to care supports and encourages the use of interdisciplinary team members in the primary health care context to assist PCPs in meeting the multidimensional needs of breast cancer survivors. In regards to fostering optimal oncologist support for PCPs, there are ways to improve communication between oncologists and PCPs. The completion of discharge letters written by oncologists supports a smooth transition of breast cancer survivors back to the primary health care setting, as it provides the essential details of a patient's diagnosis, cancer treatment, and concerns needing to be followed up on by the PCP. This discharge letter also decreases role ambiguity of PCPs, as it highlights that the oncologist is no longer following the breast cancer survivor. Furthermore, timely access to experts in cancer care is imperative to those PCPs caring for breast cancer survivors. NPs with advanced education in cancer care could be utilized to provide consultative support to generalized PCPs and improve communication between tertiary cancer centres and primary health care settings.

Based on analysis of the literature reviewed for this paper, each of the above-mentioned recommendations has the potential to significantly improve the care of breast cancer survivors if implemented. Perhaps, above all else, these recommendations facilitate buy-in of a PCP-led model of breast cancer survivorship care. Breast cancer survivorship care that is delivered by PCPs with a desire to have a role in caring for breast cancer survivors, rather than PCPs who feel obligated to this role, could greatly impact the care that is provided.

CHAPTER SIX

Conclusion

Surviving breast cancer is no longer an unattainable prospect. Due to earlier recognition and advances in cancer treatment, increasing numbers of women are surviving breast cancer. Although surviving cancer is a positive event in one's life, it is also linked to numerous acute, chronic, late, and/or permanent effects spanning physical, emotional, mental, and social domains of health. Therefore, the complexity of care a breast cancer survivor requires should not be underestimated. In Canada, these women are transitioned back to their PCPs, including NPs and physicians, soon after their cancer treatment is complete. Therefore, PCPs are responsible for providing breast cancer survivorship care to these cancer survivors.

The growing number of breast cancer survivors in Canada, along with preliminary research on issues hindering PCPs from delivering evidence-based care to this population, led me to the research question: what are the barriers that PCPs encounter in providing breast cancer survivorship care in the primary health care setting to women who have completed active cancer treatment in Canada? A comprehensive and systematic literature review was undertaken and resulted in 11 studies pertaining to this research question.

The review of the relevant literature demonstrated two types of overarching barriers PCPs experience including provider-related barriers, and system-related barriers. Provider-related barriers consisted of knowledge deficits related to education, awareness, and experience; and attitudes related to preferences in breast cancer survivorship care models and role ambiguity. System-related barriers involved workload demands and perceived suboptimal oncologist support. Together, these identified provider and system-related barriers can guide key strategies to improve PCPs' ability to provide evidence-based breast cancer survivorship care.

This study enhances understanding of the multifaceted barriers affecting the ability of PCPs to provide optimal breast cancer survivorship care in the primary health care setting. More importantly, this study guided key strategies to overcome these barriers which are the basis of the following recommendations for improvement including: adding breast cancer survivorship education in undergraduate and postgraduate education programs for PCPs; providing PCPs with continuing education opportunities on breast cancer survivorship care; utilizing knowledge translation strategies to disseminate evidence-based guidelines on breast cancer survivorship care; utilizing a team-based approach to breast cancer survivorship care; improving the transition of breast cancer survivors back to their PCPs by reinforcing the completion of discharge letters by oncologists; and expanding PCPs' access to experts in cancer care. Perhaps the most important strategy to overcome the barriers outlined includes creating a system that utilizes a subset of PCPs with a specialty in cancer care, such as NPs trained in both cancer treatment and survivorship, to provide care to breast cancer survivors and support interdisciplinary teams. Together, these strategies have the potential to close the gap in breast cancer survivorship care in Canada.

Each of the above-mentioned recommendations are promising options deserving further attention. As such, future research efforts should be directed at building on identified strengths and opportunities to improve PCPs' ability to deliver evidence-based breast cancer survivorship care. Improving the care of breast cancer survivors remains crucial in order to improve the health, wellness, and outcomes of this growing population of women in Canada.

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Appendix A

Glossary

Term	Definition
Adjuvant radiation therapy	Additional cancer treatment in the form of radiation given after the primary or initial cancer treatment, which may include surgery, chemotherapy, biological therapy, targeted therapy, or hormone therapy.
All-cause mortality	Total number of deaths due to a certain circumstance, condition, or disease, within a specified period of time.
Aromatase inhibitor	A type of hormone therapy used to treat breast cancer in estrogen-receptor positive post-menopausal women.
Axillary lymph node dissection	Surgical procedure to remove lymph nodes from the armpit (axilla), which can be implicated in breast cancer.
Benign cells	A medical term for normal cells.
Biomarkers	A biological molecule found in bodily fluids or tissue that signifies a normal or abnormal process, condition, or disease.
Brachytherapy	A form of radiation therapy in which radioactive material is placed directly into or near a tumor.
BRCA1 and *BRCA2*	Human genes that act as a tumor suppressor by helping to repair damaged DNA. When one or both of these genes are mutated cells may not be repaired properly, which can lead to the development of cancer. Mutations to these genes can be inherited and most notably increase the risk of breast and ovarian cancers, but are also associated with several different types of cancers.
Cancer	A medical term for diseases in which abnormal or malignant cells divide uncontrollably and have the ability to invade nearby tissues.
Carcinoma insitu	An early form of cancer that has not spread to nearby tissue
Connective tissue	Group of tissues that supports or binds other tissues or organs in the body.
Core needle biopsy	A procedure that extracts a tissue sample with a wide needle for microscopic examination.
Duct	A thin tube in the breast that allows the transfer of milk from the breast lobules to the nipple.
Epithelial cells	Cells that line the inner and outer surfaces of the body and act as a protective barrier.
Estrogen receptor (ER)	A protein found inside the cells of different types of tissue (i.e. female reproductive tissue) and some types of cancer cells. These receptors are activated by the hormone estrogen and may cause cellular growth.
External beam radiation therapy	The use of high-energy radiation from a machine outside the body.
Fine Needle Aspiration (FNA) biopsy	A procedure that extracts cells or tissues with a thin needle for microscopic examination.

First degree relative	An individual's parent, sibling, or child.
Human epidermal growth factor receptor 2 (HER-2)	A protein found inside the cells of different types of tissue and some types of cancer cells. These receptors are involved in cellular growth and may be expressed in large amounts in certain types of cancer including breast, ovarian, bladder, pancreatic, and stomach cancers, which can enable cancer cells to grow more rapidly.
Breast lobule	A gland on the inside of the breast that produces milk.
Lumpectomy	A breast-conserving surgical procedure that removes the breast cancer lump, as well as some of the tissue around the site, but not the breast itself.
Lymphedema	A condition characterized by tissue swelling caused by lymph fluid being unable to drain due to lymph vessels being blocked, damaged, or removed by surgery.
Malignant cells	A medical term for cancerous cells.
Mammography	The use of an x-ray to create a picture of the breast tissue and scan for cancer.
Mortality	A medical term referring to death and often expressed as a death rate, which would reflect the number of deaths due to a certain circumstance, condition, or disease, within a specified period of time.
Neoadjuvant Therapy (NAT)	Cancer treatment in the form of chemotherapy, radiation therapy, and/or hormone therapy given before the main cancer treatment (usually surgery) in order to shrink the tumor and render it operable.
Oncogene	A medical term used to describe a mutated gene of a gene involved in normal cellular growth. Oncogenes may lead to abnormal cancer cell growth.
Oncogenomic tests	Tests used to better understand the biology of a specific tumor by identifying certain cancer-related genes. These tests can lead to a better understanding of prognosis and viable treatment options.
Partial mastectomy	A breast-conserving surgical procedure that removes the area of the breast where cancer is present (often larger than a lump), as well as some of the tissue around the site, and the lining over the chest muscle if required.
Pectoralis major muscle	A fan-shaped muscle in the upper chest, spanning across the chest from the shoulder to the breastbone.
Peripheral neuropathy	A condition that causes pain, sensation loss, and weakness secondary to nerve damage in different parts of the body. It may be caused by cancer and/or its treatment, as well as different mechanisms of nerve injury.
Primary care	First line medical services and care.
Primary health care	A holistic approach to health care delivery that encompasses the majority of an individual's health needs throughout their lifetime through a spectrum of health services.
Progesterone receptor (PR)	A protein found inside the cells of different types of tissue (i.e. female reproductive tissue) and some types of cancer cells. These receptors are activated by the hormone progesterone and may cause cellular growth.

Proto-oncogene	A medical term used to describe a normal gene involved in cellular growth. Mutations to this gene may change it into an oncogene, which may lead to abnormal cancer cell growth.
Punch biopsy	A procedure that extracts a small round piece of tissue with a sharp circular instrument for microscopic examination.
Radioactive material	Material that has the ability to give off radiation.
Regional lymph node	A lymph node that drains lymph fluid from the area around a tumor.
Data saturation	Defined in research as the point when no new themes or information are discovered in the data.
Scope of practice	Refers to activities that a healthcare practitioner is authorized to perform within their professional license to practice.
Segmental mastectomy	A breast-conserving surgical procedure that removes the area of the breast where cancer is present (often larger than a lump), as well as some of the tissue around the site, and the lining over the chest muscle if required.
Sentinel lymph node biopsy	A procedure that involves the removal of the sentinel lymph node(s), which are the first lymph node(s) that would be involved in the spread of cancer cells from a primary tumor. If no cancer cells are detected in these lymph node(s) upon microscopic examination, there would be no reason for removal of other lymph nodes as cancer would not be suspected.
Stereotactic core biopsy	A procedure that involves the use of an ultrasound, CT scan, or MRI, in order to find the exact location of a tumour for removal and microscopic examination.
Stromal cell	A type of cell that constructs certain types of connective tissue that surrounds tissues and organs.
Surgical biopsy	A surgical procedure that involves the removal of tissue for microscopic examination.
Systemic radiation therapy	A type of radiation therapy in which a radioactive substance is given by mouth or injected into a vein so that it can travel throughout the bloodstream in the body to locate and kill circulating tumor cells.
Tamoxifen	A drug used to treat and/or prevent estrogen receptor-positive breast cancer, meaning the cancer can grow from the hormone estrogen. It works by blocking the effects of estrogen in the breast tissue, which keeps the cancer cells from growing.
Tertiary health care	Highly specialized medical care by specialists (i.e. oncologists) working in a facility that has trained providers for advanced and complex procedures (i.e. chemotherapy, radiation, etc.).
Trastuzumab	A drug used to treat HER2-positive breast cancer. It works by binding to a protein called HER2, which may help the immune system kills the cancer cells.
Triple negative breast cancer	A diagnosis used to define breast cancer that tests negative for all of the following receptors that cause cancer growth including estrogen, progesterone, and HER-2. Triple negative breast cancer is usually more aggressive and difficult to treat because hormone blocking treatment is ineffective.

Tumor	Tumors may be benign (non-cancerous) or malignant (cancer) and are abnormal masses of tissue that result from abnormal cellular growth.
Wide local excision	A breast-conserving surgical procedure that involves the excision of cancer, as well as some of the tissue around the site.
Wire localization biopsy	An image guided procedure that involves the placement of a thin wire to mark the location of a lump of abnormal tissue, where an excisional to remove the area is required for microscopic examination.

Appendix B

Stage One and Two Search Results July 31, 2018 - Electronic Databases

Terms	CINAHL with Full Text	Terms	Medline with Full Text	Terms	PubMed
"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Transitional Care" **OR** "Oncologic Care"	Results: 31	"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Transitional Care" **OR** (keyword) "Oncologic Care"	Results: 1	(MeSH terms) "Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms"	Results: 485
"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Primary Health Care"	Results: 29	"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Primary Health Care"	Results: 57	(MeSH terms) "Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Primary Health Care"	Results: 140
"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Primary Health Care" **OR** "Health Care Delivery"	Results: 73	"Physicians" **OR** "Nurse Practitioners" **AND** "Breast Neoplasms" **AND** "Primary Health Care" **OR** "Delivery of Health Care"	Results: 279	N/A	N/A

"Physicians" **OR** "Nurse Practitioners" **AND** "Cancer Survivors"	Results: 117	"Physicians" **OR** "Nurse Practitioners" **AND** "Survivors"	Results: 143	(MeSH terms) "Physicians" **OR** "Nurse Practitioners" **AND** "Cancer Survivors"	Results: 18
"Breast Neoplasms" **AND** "Primary Health Care"	Results: 198	"Breast Neoplasms" **AND** "Primary Health Care"	Results: 574	(MeSh terms) "Breast Neoplasms" **AND** "Cancer Survivors" **AND** "Primary Health Care"	Results: 8
(keyword) "Breast Cancer Survivorship"	Results: 161	(keyword) "Breast Cancer Survivorship"	Results: 208	(textword) "Breast Cancer Survivorship"	Results: 174
(keyword) "Survivors of Breast Cancer"	Results: 228	(keyword) "Survivors of Breast Cancer"	Results: 299	N/A	N/A
"Physicians" **OR** "Nurse Practitioners" **AND** (keyword) "Breast Cancer Survivors"	Results: 22	"Physicians" **OR** "Nurse Practitioners" **AND** (keyword) "Breast Cancer Survivors"	Results: 29	(MeSH terms) "Physicians" **OR** "Nurse Practitioners" **AND** (textword) "Breast Cancer Survivors"	Results: 30
(keyword) "Breast Cancer Survivorship Care"	Results: 30	(keyword) "Breast Cancer Survivorship Care"	Results: 39	(textword) "Breast Cancer Survivorship Care"	Results: 39
(keyword) "Survivorship Care in Breast Cancer"	Results: 5	(keyword) "Survivorship Care in Breast Cancer"	Results: 1	(textword) "Survivorship Care in Breast Cancer"	Results: 0
(keyword) "Primary Care Provider" **AND** "Breast Cancer"	Results: 34	(keyword) "Primary Care Provider" **AND** "Breast Cancer"	Results: 76	(textword) "Primary Care Provider" **AND** "Breast Cancer	Results: 49

Limiters: July 2008 – July 2018 (all); English (CINAHL, Medline); Peer-reviewed (CINAHL, Medline)

CINAHL with Full Text: Total identified articles: **928**
Medline with Full Text: Total identified articles: **1706**
PubMed with Full Text: Total identified articles: **943**

Electronic Databases: Total Identified articles: **3577**

Appendix C

Stage One and Two Search Results August 1, 2018 – Web Search

Terms	Google Scholar
All Words: "Breast Cancer Survivorship" **AND** "Primary Care Providers" Exact Phrase: "Breast Cancer Survivorship" With at least one word: "Physicians" **OR** "Nurse Practitioners" **OR** "Primary Care Providers"	Results: 452

Limiters: 2008 – 2018

Web Search: Total Identified articles: **452**

Appendix D

Literature Review Matrix

Study, Country, Design	**Purpose**	**Population**	**Strength & Weaknesses**	**Key Findings**
Kantsiper et al. (2009) United States Qualitative study using focus groups – thematic analysis	Breast cancer survivors, PCPs and oncology specialists' perspectives on their needs, priorities and approach to Breast Cancer Survivorship (BCS) care.	N = 21 Female breast cancer survivors N = 16 Cancer specialists N = 15 PCPs (physicians and NPs)	Strengths: - data collected over two years by the same two facilitators - data transcribed verbatim - quotes from participants - similar findings to other studies Weaknesses: - conclusions not shared and validated by participants	**PCPs Preferred Survivorship Care Model:** - majority - oncologist-led care model **PCPs Knowledge in Components of BCS Care:** - concerns of missing a cancer recurrence; fears of medical-legal consequences - no routine psychosocial support provided to breast cancer survivors - expressed wanting more training on BCS **Provider-related Barriers:** - ambivalence about having responsibility for BCS care, linked to role confusion, confidence levels, and knowledge. - assumptions BCS care was being delivered by an oncologist. **System-related Barriers:** - challenged by time-limited appointments and meeting the demands of issues outside of BCS care. - need for written survivorship care plans to guide care - inadequate communication with oncologists **Facilitators:** - ongoing training in breast cancer survivorship care - written survivorship care plans - staying connected to oncologists

				Breast Cancer Survivors' Perceptions: - perceived PCPs as not having a central role in breast cancer survivorship care and as such felt their needs as cancer survivors were not being met. - felt a written document such as a discharge letter or a survivorship care plan and ongoing communication between their PCP and oncologist would facilitate better coordination of their care after active cancer treatment ends.
Potosky et al. (2011) United States Quantitative cross-sectional study using surveys – statistical analysis software	PCPs' and oncologists' preference in survivorship care model; skills and confidence in providing survivorship care to breast or colon patients; and current surveillance practices of such patients.	N = 1072 Primary Care Physicians N = 1130 Oncologists	Strengths: - random participant selection - modified Delphi approach, pilot testing, and revisions of SPARCCS instrument support its validity - 57.6% absolute response rate - nationally representative sample generalizable to physicians across the United States - no measured response biases Weaknesses: - data was taken in 2009, therefore the results may not be as pertinent today - self-reported data may have introduced social desirability bias	**PCPs' Preferred Survivorship Care Model:** - 38% - shared-care model - 25% - oncologist-led care model - 22% - specialized clinic model - 10% - PCP-led care model **PCPs' Knowledge in Components of BCS Care:** *"Strongly" or "Somewhat" agreed* - 59% - PCPs have the skills to provide BCS care related to the effects of the cancer and its treatment. - 75% - PCPs have the skills to provide appropriate surveillance practices. • a significant proportion of physicians in the study recommended more surveillance tests than advised by the guidelines, suggesting a possible knowledge deficit. - 51% - PCPs are better suited to provide psychosocial support to breast cancer survivors than oncologists. **PCPs' Confidence in Providing BCS Care:** - 40% of physicians felt very confident in their ability to detect recurrent disease. - 23% of physicians felt very confident in managing the late and long-term effects of cancer and its treatment. - 41% of physicians felt very confident in managing the psychosocial effects of cancer and its treatment.

Smith et al. (2011) Canada Convergent parallel mixed-methods study using surveys – univariate statistics	Confidence of primary care physicians' ability to provide BCS care	N = 587 Primary care physicians	Strengths: - random participant selection - 59% response rate Weaknesses: - lack of detail concerning participants' characteristics; unable to confirm generalizability of results - authors did not report how qualitative data was analysed	**PCPs' Confidence in Providing BCS Care:** - most confident: screening for recurrence - least confident: counselling on sex, body image, family, and managing lymphedema **Predictors of PCPs' Confidence:** - high confidence levels in screening for recurrence was significantly associated with increased numbers of breast cancer survivors seen by the physician, whereas there were no associations found for those care components PCPs are least confident providing. **System-related Barriers:** - a high number of respondents (80%) conveyed that they "always" received a discharge letter from oncologists and 92% found them useful. - some PCPs (43%) preferred these discharge letters to be point-form, whereas others (38%) preferred both point form and detailed data. - "very useful" data: diagnosis and treatment summary (97%), recommended follow-up (96%), recommended adjuvant hormone therapy (92%), summary of active issues (85%), reminder checklist for follow-up (85%), summary of potential toxicities (84%), and prognosis (84%). Of least perceived futility were guidelines on BCS care (61%), and lists of community resources for breast cancer survivors (56%). **Facilitators:** - more information pertaining to hormonal therapy and surveillance components of BCS care. - "complete information" on breast cancer survivors given by oncologists to improve transition.

Cheung et al. (2013) United States Quantitative cross-sectional study using surveys – statistical analysis software	How physician and oncologist attitudes regarding breast and colon cancer survivorship affect preference for different cancer survivorship care models.	N = 938 Primary care physicians N = 1088 Oncologists	Strengths: - large, nationally representative sample size Weaknesses: - lack of transparency due to no separate data on PCPs' preferences for PCP-led care models versus shared-care models in the main body of the article (data only found in appendix) - self-reported data may have introduced social desirability bias	**PCPs' Preferred Survivorship Care Model:** - 40% - shared-care model - 26% - oncologist-led care model - 18% - specialized clinic model - 10% - PCP-led care model **PCPs' Knowledge in Components of BCS Care:** *"Strongly" or "Somewhat" agreed* - 57% - PCPs have the skills to provide BCS care related to the effects of the cancer and its treatment. - 74% - PCPs have the skills to provide appropriate surveillance practices. - 50% - PCPs are better suited to provide psychosocial support to breast cancer survivors. - 32% - PCPs should be responsible for this BCS care. **PCPs' Confidence in Providing BCS Care:** - 34% of physicians felt very confident in their ability to detect recurrent disease. - 19% of physicians felt very confident in their ability to manage late and long-term effects of cancer and its treatment. **Predictors of PCPs' Preference for BCS Care Models:** - those physicians who were ≥40 years old, were more likely to prefer an oncologist-led care model for survivorship care. - those with cancer surveillance experience were more likely to support a PCP-led care model or shared-care model rather than an oncologist model. - those respondents who felt PCPs should be responsible for BCS care, were more likely to support a PCP-led care model or shared-care model.

Virgo et al. (2013) United States Quantitative cross-sectional study using surveys – multivariate logistic regression models	Barriers and concerns perceived by primary care physicians and medical oncologists in providing breast and colorectal survivorship care for those five-years post-cancer treatment	N = 1072 Primary care physicians N = 1130 Oncologists	Strengths: - large, nationally representative sample size - well laid out, easy to read Weaknesses: - self-reported data may have introduced social desirability bias	**Patient-related Barriers:** - 59.6% - patients refused care or were non-compliant with recommendations for care - 53.3% - patients requested more cancer surveillance testing than recommended by guidelines **Provider-related Barriers:** - 56.5% - worry over missing aspects of survivorship care - 51.1% - order more tests than recommended by guidelines in order to avoid medical-legal consequences - 47.7% - worry over duplicated care - 46.4% - inadequate knowledge and training to care for breast cancer survivors - 33.1% - role ambiguity **Predictors for Barriers:** - the more knowledge in components of BCS care a physician felt they had, the less likely they expressed uncertainty around their role and surveillance interventions.
Nekhlyudov et al. (2013) United States Quantitative cross-sectional study using surveys – multivariate logistic regression models	Compared awareness of chemotherapy associated long-term effects between primary care physicians and oncologists.	N = 1072 Primary care physicians N = 1130 Oncologists	Strengths: - large, nationally representative sample size Weaknesses: - results would have been more comprehensive if additional components of BCS care were assessed, such as awareness of psychosocial adverse effects of breast cancer and its treatment	**PCPs' Knowledge in Components of BCS Care:** - Only 6% of physicians reported awareness of peripheral neuropathy, cardiac dysfunction, premature menopause and secondary malignancies as late or long-term effects pertaining to doxorubicin, cyclophosphamide, paclitaxel, and/or oxaliplatin. **PCPs' Confidence in Providing BCS Care:** - 23% of physicians felt very confident in managing the late and long-term effects of cancer and its treatment.

			- self-reported data may have introduced social desirability bias	**Predictors of Knowledge:** - the less confident physicians were in providing BCS care, the less knowledge they had around the late and long-term effects if chemotherapy. - the more breast cancer survivors seen per year, the more knowledge physicians had on the physical effects of treatment.
Dawes et al. (2015) United States Explanatory sequential mixed methods study using quantitative surveys and qualitative focus groups – Strata/IC statistical software and thematic analysis	PCPs knowledge, attitudes, and confidence in delivering BCS care.	N = 42 Primary care physicians N = 13 NPs N = 4 Physician assistants	Strengths: - 51% response rate (quantitative surveys) - use of the SPARCCS instrument - adequate number of participants at focus groups - focus groups taped recorded and transcribed verbatim Weaknesses: - small sample size/small geographical region studied (for quantitative data) - focus groups may have elicited false data in comparison to individual sessions due to fear of judgement - data saturation not confirmed	**PCPs' Preferred Survivorship Care Model:** - 40% – oncologist-led care model - 28% - specialized clinic model - 22% - shared-care model - 10% - PCP-led care model **PCPs' Knowledge in Components of BCS Care:** *"Strongly" or "Somewhat" agreed* - 63% felt they had the knowledge to monitor for cancer recurrence • only 10% of respondents ordered surveillance testing that complied with breast cancer survivorship guidelines - 39% felt they had the knowledge to provide other aspects of BCS care. - 29% felt they were better suited to offer psychosocial support than oncologists **PCPs' Confidence in Providing BCS Care:** *"Very confident"* - 25% - managing psychosocial effects - 22% - providing appropriate surveillance - 14% - managing physical effects **Provider-related Barriers:** - role ambiguity - knowledge deficits related to ongoing hormonal therapy regimens

				System-related Barriers: - concerns over timing of transition **Facilitators:** - additional training in cancer specific care - use of survivorship care plans
Smith et al. (2015) Canada Quantitative cross-sectional study using surveys – standard univariate statistics	Perceptions of breast cancer survivors and primary care physicians in regards to the ability of physicians to provide BCS care.	N = 1065 Breast cancer survivors N = 587 Primary care physicians	Strengths: - surveys pilot-tested - 59% response rate for physicians; 47% response rate for breast cancer survivors - large sample size Weaknesses: - survey instruments not rigorously validated - possibility of response-bias - unclear if the breast cancer survivor participants were required to be discharged from their oncologist in order to be eligible to participate in this study	**PCPs' Confidence in Providing BCS Care:** - 80% of primary care physicians described "good" or "adequate" confidence in their ability to manage all components of BCS care. - most confident in surveillance practices such as screening for recurrence, with approximately 75% of respondents reporting a "good" ability in this care component. - least confident in delivering family counselling (24%), providing sex and body image counselling (26%), and managing lymphedema (24%). **Breast Cancer Survivors' Confidence in PCPs Ability to Provide BCS Care:** - breast cancer survivors were confident in primary care physicians' ability to provide BCS care as well, however less so than physicians were. - most confident in PCPs' ability to screen for recurrence (65%) - least confident in PCPs' ability to deliver family counselling (41%) or sex and body image counselling (36%).
O'Brien et al. (2015) Canada	Experiences of family physicians in their role of providing BCS care and awareness about	N = 18 Primary care physicians	Strengths: - diverse characteristics within participant sample - interviews conducted by one researcher	**PCPs' Preferred Survivorship Care Model:** - most physicians felt well-suited to provide BCS care but were not comfortable taking on this role until three to five-years post diagnosis. **PCPs' Knowledge in Components of BCS Care:**

Descriptive qualitative study using semi-structured interviews – constant comparative analysis	their perceptions of Survivorship Care Plans (SCP) and oncologist discharge letters.		- interviews one-on-one, which minimized the possibility of social desirability bias. - interviews audiotaped and transcribed verbatim - data saturation confirmed - authors utilized data management program to maintain an audit trail Weaknesses: - none noted	- identified knowledge gaps in psychosocial care. - physicians perceived BCS care as only conducting clinical breast exams and ordering mammograms, which in actuality is only attending to the surveillance components of care required **System-related Barriers:** - most voiced that a 1-page record of care was the only useful aspect of cancer survivorship care plans. - most physicians found reminder checklists useless, as they used online systems with patient's Electronical Medical Records (EMR) to recall the patient. - respondents had variable views regarding the value of oncologist discharge letters - most respondents were concerned regarding timely ongoing communication with oncologists. **Facilitators:** - summary of cancer treatment on 1-page record of care - empowering breast cancer survivors - timely communication with oncologists
Luctkar-Flude et al. (2015b) Canada Quantitative cross-sectional study using surveys – standard univariate statistics	Aspects of BCS care being implemented by PCPs, knowledge gaps and differences between physician and NP care delivery.	N = 62 Primary care physicians N = 20 NPs	Strengths: - study's findings align with previous research findings Weaknesses: - 25% response rate - lack of diversity in participant sample - potential for response bias	**PCPs' Knowledge in Components of BCS Care:** - less than half (46.4%) of the key guideline recommendations for BCS care were being implemented by PCPs. - 28.5% of those recommendations were unknown to PCPs. - implementation rates were higher for prevention and surveillance aspects of survivorship care, and lower for management of long-term physical and psychosocial effects of cancer and its treatment. **Predictors of Knowledge:** - those care components with lower implementation rates were also areas that knowledge gaps existed.

Luctkar-Flude et al. (2018) Canada Qualitative descriptive method – semi-structured interviews	Barriers and facilitators related to PCPs, including physicians and NPs, implementing evidence-based BCS care	N = 10 Physicians N = 9 NPs	Strengths: - pilot-tested one-on-one interviews - interviews conducted by the same researcher - interviews recorded and transcribed verbatim - data saturation confirmed - peer-review, member checking, and triangulation used in research process Weaknesses: - lack of diversity in participant sample	Found three major themes related to barriers: 1) inconsistent educational preparation; 2) provider anxieties; and 3) primary care burden. **PCPs' Preferred Survivorship Care Model:** - preferences in cancer survivorship care models were divided, with some PCPs feeling it was not their responsibility, and others voicing they were ideal candidates to assume such roles. **PCPs' Knowledge in Components of BCS Care:** - no formal education on BCS care and therefore, they experienced challenges related to knowledge gaps and keeping up-to-date with care guidelines. **PCPs' Confidence in Providing BCS Care:** - fears of medical-legal consequences related to patients falling through the cracks and as such, having cancer recurrence go unnoticed. **Predictors of Confidence:** - individuals with more confidence in providing care to survivors were those with prior experience. **System-related Barriers:** - primary care workload would not accommodate the higher acuity care required for breast cancer survivors. - increased burden on administrative staff related to EMRs and recall procedures. - concern over inadequate access to oncologists **Facilitators:** - Found three major themes related to facilitators: 1) tools and technology; 2) empowering survivors; and 3) optimizing nursing roles.